





**REVIEW OF
NEUROLOGY AND PSYCHIATRY**

REVIEW
OF
NEUROLOGY AND PSYCHIATRY

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Review
of
Neurology and Psychiatry

Original Articles

**POSTERIOR BASAL MENINGITIS; ACQUIRED HYDRO-
CEPHALUS; CURED BY DRAINAGE OF THE
FOURTH VENTRICLE.**

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AND

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THAT internal hydrocephalus may result from the closure of the foramen of Magendie in the roof of the fourth ventricle by inflammatory adhesions which are produced in the course of posterior basal meningitis, or its more acute form of cerebro-spinal meningitis, is now a well-recognised fact, the accumulation of cerebro-spinal fluid in the ventricular system being the natural consequence of the obstruction of its outflow.

Attempts of various kinds have been made to give surgical relief to the condition. The method which has suggested itself as the most likely to be of immediate and permanent benefit is that of removing the obstructive adhesion and re-establishing the drainage from the ventricle. This operation was undertaken in six cases, on the recommendation of Sir Thomas Barlow and Dr Lees (1), by Mr Ballance, and the same surgeon operated on two other cases under the care of the late Dr Sturges and the late Dr Hadden. Lees and Barlow, in the article above referred to, state that in all the cases the operation produced considerable

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collapse, and the results were unsatisfactory, so much so that the writers go on to say : " Since 1892 we have felt that the results of operation in the cerebello-medullary region scarcely justified further trials." Dr Batten (2), in the second edition of the same work, is almost equally discouraging. He states that although a few cases have been successful as far as the preservation of life is concerned, the mental impairment which remains is very considerable.

In an article by one of us (Dr Bruce) and Mr Stiles (3), a case is described in which the operation was followed by relief for ten days. In this case there was an excessive escape of cerebro-spinal fluid. In the same paper fifteen other cases are referred to, in which the occipital bone was trephined and the foramen of Magendie opened up, in five instances with a successful result. Dr Bruce has had the operation performed in other two cases with marked temporary benefit, but with a fatal termination from complications. In both of these cases, however, there was a large escape of cerebro-spinal fluid.

The case to be recorded shows that the prognosis is by no means so hopeless as one would gather from the existing literature, and from the opinion prevailing among physicians and surgeons. During the initial attack of acute meningitis, and for a year after, the patient was under the care of her family physician, Dr Campbell of Kirriemuir, who kept a minute and accurate record of her condition during that time. She then passed under the care of Dr Bruce, who had an opportunity of observing the subsequent evolution of the case, until the condition showed paralysis of both limbs, blindness, deafness, paralysis of the sphincters, and mental torpor which passed into a condition of coma. In its earlier stages certain features were suggestive of the probability of a cerebral tumour, but were not sufficiently definite to warrant any operation other than one of decompression for the gradual failure of sight. On the other hand, the probability that the advancing blindness was due to intraventricular pressure rather than to the optic neuritis, and that consequently little, if any, benefit would be gained by such an operation, and the fact that previous surgical experience had proved so discouraging, led to any operation being deferred until the diagnosis was absolute and the hopelessness of recovery without operation had become apparent.

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The practically complete recovery which followed the operation is an indication that it is one which is not only justifiable, but which ought to be recommended. It would appear to us to be advisable not to wait so long as was done in this case, for one cannot help feeling a certain surprise that a recovery so complete could follow such advanced symptoms.

We would specially draw attention to a point in the technique of the operation upon which we agreed beforehand, and which, we think, is probably responsible for the absence of escape of cerebro-spinal fluid, namely, the removal of a large portion of the occipital bone and the posterior border of the foramen magnum. The free access to the roof of the fourth ventricle and the adjacent parts thus obtained enabled the adhesions to be easily dealt with, and also probably permitted of the re-opening of channels of escape for the cerebro-spinal fluid into the subarachnoid spaces which could not have been established, or at all events not so easily established, through a small opening.

HISTORY OF THE CASE.

D. V., a school-girl, aged 11, suffering from severe and more or less periodic headaches, was admitted to the Royal Infirmary, Edinburgh, under the care of Dr Bruce, on the 7th October 1909. She was recommended by Dr Campbell of Kirriemuir, by whom the following history of her illness was given in a letter:—

“The headaches first started twelve months ago with no marked periodicity, every three, four or five weeks, and were always associated with vomiting of a bilious nature. The pain was central and frontal. Ordinary measures proved of no avail, and she then had some of her teeth drawn and her sight tested—a mixed astigmatism being found. About a day or two after this she developed symptoms which led to a diagnosis of cerebro-spinal meningitis, namely, intense pain in the head, screaming and dashing her head against the wall, etc., alternating with short periods when she was almost comatose, intense photophobia and vomiting of a bilious type. Kernig’s sign was present. Tightness of the muscles at the back of the neck was made evident by moving the head forward, when she complained of pain in them. The temperature was irregular, and a slight measly rash limited in extent to the upper part of the chest was present for a few hours.

She made a good recovery in a few days. Since then she has been subject to extremely severe headaches, occurring every ten days, almost to an hour. There is always a marked prodroma, viz., gnashing of the teeth the night before, and yawning and restlessness just before the onset of the headache, which comes on abruptly and always in the early morning. The headaches are exceedingly severe and lead up to a condition of collapse. She fainted for a time during a recent attack.

The headache comes on in spasms and her breathing follows the Cheyne-Stokes type, the spasm of pain agreeing with the commencement of deep inspiration. The headache persists for some hours and then gradually tapers off. The pupils are equal and dilated.

Beyond a slight tendency to constipation her health between the attacks is satisfactory. Her previous health appears to have been good, and her social conditions in every way excellent."

On 7th October 1909 she was admitted to Hospital, when the following notes of her condition were taken:—

She is a well-developed girl, 4 ft. 6 $\frac{3}{4}$ ins. in height and weighing 4 st. 7 $\frac{1}{2}$ lbs. Her cheeks are rosy and the conjunctivæ are of a good colour. The pupils are dilated. On examination she complains of no pain. She appears to be quite intelligent, answering questions in a quiet, sensible way, and showing no signs of undue emotionalism. There is no delirium, insomnia, fits, tremors or other abnormal movements. Her speech is unaffected and she is right-handed.

Cranial Nerves.—She has worn glasses for about a year for astigmatism, which is perfectly corrected. Ophthalmoscopic examination reveals a well-marked optic neuritis. On 15th October the eyes were examined by Dr George Mackay, whose report was as follows: "Double optic neuritis, the right eye being more affected than the left (greater swelling and vessels more tortuous). With regard to vision, she has some hypermetropic astigmatism, for which her glasses are of benefit to her. Vision with glasses, R. $\frac{6}{18}$, L. $\frac{6}{18}$. The condition of vision of the right eye is in accordance with the more severe condition."

The naso-labial fold on the right side is somewhat flattened. Both eyes are closed with apparently equal force. Taste is satisfactory. Hearing is good in both ears, and there is no history of any ear discharge or pain.

There is no anæsthesia of the palate. Taste is good in the posterior part of the tongue. There is no difficulty in swallowing. The palate moves freely. The tongue is protruded in the middle line and there is no tremor.

Sensory Functions.—*Headache*, as already described, mainly central. There is no pain, tingling or vertigo.

Sensibility to pain, touch, heat and cold appears to be everywhere normal. There is no paræsthesia. The muscular and stereognostic senses are normal, as is the joint sense. There is no Rombergism, but a slight unsteadiness.

The motor power appears to be very good in all the various groups of muscles in the arms and legs. Co-ordination is quite satisfactory.

Reflexes.—*The epigastric and abdominal reflexes are present on the right side, but completely absent on the left.* The tendon reflexes of the lower limbs are increased, to a somewhat greater extent on the right than on the left side. *The plantar responses are of the flexor type on both sides.* The deep reflexes of the upper extremities are normal.

With regard to the circulatory, respiratory and other systems, nothing abnormal was found on examination.

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The following is an abstract made from the clinical notes in the ward journal:—

After her admission to hospital she was kept in bed, placed on light diet and treated with small doses of iodide of potassium and syrup of the iodide of iron. On the 11th October she had an attack of severe headache which culminated in free vomiting of a cerebral type, not related to the taking of food nor preceded by nausea. On the 14th October there was for the first time an involuntary action of the bowels whilst she was asleep.

During the subsequent months there was a gradual increase in the frequency and severity of the headaches, which now occurred without any definite periodicity. They were sometimes accompanied by vomiting, sometimes not.

During November and December the involuntary action of the bowels during the night became very frequent, occurring almost every second or third night, and bearing no relation to the attacks of headache and vomiting. On the night of the 24th December an involuntary passage of urine occurred, and during the subsequent months this alternated with or accompanied the involuntary action of the bowels. On the same date it was noted that the abdominal reflex, although still present on the right side, was not so active as before, and that it was entirely absent on the left side. No tremor of the right or left arm could be made out. The power of walking was greatly impaired, owing mainly to extreme vertigo. Both knee jerks were greatly exaggerated, especially on the left side. The plantar response on the left side was of the extensor type; on the right it was flexor.

On 14th January 1910 the patient had a slight febrile attack, the temperature rising to 104° and the pulse to 152. This attack passed off in a day or two.

During the subsequent weeks the headaches, vomiting, and loss of control of the organic reflexes became more and more marked, occurring, however, without regularity or special relation to each other. Von Pirquet's sign was negative.

On 9th February it was noticed that the Babinski sign could be elicited on both sides; it was still, however, more marked on the left.

During the second half of February, March and April it became gradually apparent that a change was taking place in the conformation of the face and head. The forehead seemed to be enlarged and the head as a whole increased in circumference. At the same time the patient's mental state gradually became less and less active. From being a bright, intelligent girl, full of fun when she was free from headache, she had by about the middle of April become more or less dull, torpid and drowsy. From the beginning of March the percussion note obtained from the skull was observed to be gradually altering in character, and becoming more and more tympanitic. The subcutaneous tissues over the whole body also showed a curious appearance, somewhat like that seen in myxoedema.

On 5th May X-ray photographs made antero-posteriorly and laterally showed a definite separation of the sutures of the coronal bones. The lateral view is shown in Plate 1. On the same day the

patient was seen by Mr Cotterill, and it was agreed that there could be no manner of doubt as to the presence of internal hydrocephalus. Mr Cotterill suggested that in the first instance the lateral ventricle might be aspirated, and on 10th May this was done in his department, the aspirating needle being passed through the separated coronal suture on the right side. About 4-5 ounces of clear fluid were withdrawn. The fluid showed slight cloudiness on boiling, but no increase of cellular elements and no tubercle bacillus. It reduced Fehling's solution.

The relief obtained by this operation was comparatively slight. The headaches were perhaps less marked and frequent, and the vomiting ceased, but the loss of control over the bowels and bladder remained complete, and the mental condition steadily deteriorated. She had no recollection of what took place between the time when she was re-admitted to Dr Bruce's ward and the second operation. There was a slight diminution in the optic neuritis, but no improvement in sight. The ocular movements remained satisfactory, and there was no nystagmus. The pupils were widely dilated and vision remained very poor, although unchanged since the last examination, but the patient's mental condition was so feeble that it was practically impossible to make an accurate estimate of this. As regards the lower and upper limbs, the deep reflexes were all greatly increased and knee and Achilles clonus were both present. There was extreme spasticity of the limbs.

On 28th May, after a second consultation, the patient was again transferred to Mr Cotterill's department, with a view to the opening of the fourth ventricle through the occipital bone. On the 29th Mr Cotterill, under chloroform, opened into the fourth ventricle in the following way: A large semilunar flap was made from the occipital region, exposing the occipital bone. A trephine circle was taken from each side of the median ridge and the intermediate part of the bone, together with the posterior part of the foramen magnum, was removed. There was considerable difficulty with hæmorrhage from a large emissary vein, which ceased, however, when the bone was removed. After the dura was incised the occipital sinus was ligatured and divided. The lateral lobes of the cerebellum were then held apart and the thickened arachnoid on the posterior part of these lobes and over the roof of the fourth ventricle was exposed. A vesicle containing a considerable amount of fluid was seen bulging from the fourth ventricle. On opening the wall of this cyst there was a free escape of the cerebro-spinal fluid. When this had diminished, and the bleeding points had been ligatured, the external wound was closed with silk-worm gut.

The patient's condition began to improve immediately after the escape of the cerebro-spinal fluid. On the following day the temperature was 100° and the pulse 148. The patient was quite intelligent when awake. On 31st May the dressings were changed by Mr Cotterill. They had not been soaked through. On 12th June the wound discharged a little serous and a little sero-purulent fluid. On 28th June this discharge was lessening. On 8th July the patient was



To illustrate Paper by Dr Bruce and Mr Cotterill.

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definitely improving. She had had no headache since the operation and had regained control over her sphincters. She could now see to read large print, could sit up in bed unaided, and took an intelligent interest in all that went on around her.

On 16th August she was re-admitted to Dr Bruce's ward. She had then no headache, no incontinence of urine or fæces, and no sickness. She could see quite well at a distance, and could read large print 4 inches from her eyes. She could hold her hands out without tremor. Mentally she had greatly improved, and now laughed, talked and took an interest in everything around her. The optic discs showed no engorgement of vessels, but there was slight pallor and blurring of the edges. The pupils were moderately dilated and reacted to light and accommodation. There was no paralysis of the eye-muscles, no nystagmus and no diplopia. There was no paralysis, sensory or motor, of any of the cranial nerves. The spasticity of the limbs was diminished. The reflexes had gradually become less marked. The abdominal and epigastric reflexes were present and active on both sides, and the organic reflexes were again normal. The size of the head had gradually diminished, and at the time of her discharge from hospital it was almost normal. By this time the peculiar (? myx-œdematous) condition of the subcutaneous tissues had also entirely disappeared.

From the date of her re-admission to Dr Bruce's ward the improvement steadily continued. During September the patient again learned to walk by herself, and by the end of the month she had recovered so much that she was able to assist in the ward kitchen in washing dishes. By the middle of October all her functions were practically normal. She walked with a somewhat wide base, bending her body a little forward, and showed slight spasticity, but otherwise, mentally and physically, she was very well, and was discharged cured on 3rd November 1910.

REFERENCES TO LITERATURE.

1. Lees and Barlow. Clifford Allbutt's "System of Medicine," 1899, Vol. vii., p. 558.
2. Frederick E. Batten. Allbutt and Rolleston's "System of Medicine," 1910, Vol. viii., p. 184.
3. Alexander Bruce and Harold J. Stiles. "Drainage through the Fourth Ventricle in a Case of Acquired Hydrocephalus," *Scot. Med. and Surg. Journ.*, March 1898, p. 215.

DESCRIPTION OF PLATE.

X-ray photograph. Lateral view of skull, to show separation of the coronal suture.

**THE DIFFERENTIAL DIAGNOSIS BETWEEN HYDRO-
CEPHALUS, WITHOUT ENLARGEMENT OF THE
HEAD, AND BRAIN TUMOUR BY MEANS OF THE
X-RAYS.**

By WILLIAM G. SPILLER, M.D.,

Professor of Neuropathology and Associate Professor of Neurology in the University
of Pennsylvania; Corresponding Member of the Gesellschaft Deutscher
Nervenärzte.

OCCASIONALLY the diagnosis between hydrocephalus and brain tumour is extremely difficult. In 1902 I reported a case, presenting this difficulty, that had been in the service of Dr C. K. Mills, and the clinical report was given in full at that time. It is sufficient to repeat here that the patient was a youth aged 19 years. He had had headache with vomiting occasionally for many years, but about six months before death the headaches became more severe, and walking began to be difficult, so that he staggered like a drunken person and had vertigo. Some exophthalmos was present. The patellar reflexes were exaggerated, but ankle clonus was not obtained. Slight patellar clonus was present on each side. Dr de Schweinitz found a well-marked beginning optic neuritis in each eye. Shortly before death the patient had slight tremor of the muscles of the arms and face, lasting a few seconds; this was followed by unconsciousness, stertorous breathing, and irregular and rapid pulse.

There was much in this case to suggest cerebellar tumour. The symptoms had been severe during a period of only about six months before death. The head was not unusually large and did not suggest hydrocephalus by its size.

At the necropsy the third and lateral ventricles of the brain were found much distended, the fourth was of normal size. The aqueduct of Sylvius was occluded by overgrowth of neuroglial tissue and ependymal cells.¹ The calvarium on the interior was deeply grooved by the convolutions of the brain, and at the sides was hardly thicker than a piece of paper. When it was held up to the light the atrophied portions corresponding to the convolutions allowed considerable light to pass through.

¹Spiller, *The American Journal of the Medical Sciences*, July 1902, Case 2.

At the time this report was made there appeared to have been no definite means of determining the correct diagnosis during the life of the patient. The symptoms had not persisted long enough to suggest the probability of hydrocephalus, and the skull had not yielded to the internal pressure in such a way as to cause a separation of the sutures, as the hydrocephalus developed after firm union of the bones of the skull had occurred. It was because of this firm union that the atrophy of the interior of the calvarium was so great. Whether the entire skull was atrophied or not, I cannot say; presumably it was. Some recent results obtained by Dr C. L. Leonard with the X-rays have made it desirable to revert to the above case.

At the March 1910 meeting of the Philadelphia Neurological Society, Dr Alfred Gordon presented a case, under the title, "A Case for Diagnosis," which to me appeared like one of hydrocephalus, although Dr Gordon considered this diagnosis uncertain. Dr Leonard¹ had made X-ray photographs of the head, which showed distinct areas of depression in the inner table of the skull. Having in mind the condition of the calvarium described by me in 1902, and recognising that a skull of this character would give just such pictures with the X-rays as those exhibited by Dr Leonard,² I expressed the opinion that Dr Leonard had obtained photographs showing atrophy of bone produced by pressure of the cerebral convolutions, and corresponding in form to these convolutions, and had made a valuable contribution to neurology. He had given us a means whereby we might be able to distinguish between certain cases of hydrocephalus and tumour during the life of the patient. It seems to be possible by means of the X-rays to prevent unsuitable operation in some of these cases in which hydrocephalus simulates brain tumour. The X-ray pictures, to be of most service in such cases, should be made stereoscopically, as Dr Leonard's plates were made in this way, and thereby the recognition of the condition was made easier. His photographs will be published in the *Archives of the Roentgen Ray*.

¹ Gordon, *Journal of Nervous and Mental Disease*, Sept. 1910, p. 558.

² Since the above was written Dr Leonard has made an X-ray photograph of the calvarium from my patient, and has obtained a picture like that described in this article.

DESCRIPTION OF FIGURES.

Fig. 1.—The photograph represents the atrophied areas somewhat inadequately. The white margin (*a a a*) represents the thickness of the bone where the saw has cut. At places (*b b b*) where the saw has cut through atrophied areas, the bone is not thicker than a piece of paper. The bone in some of the depressions, as at *c*, is so thin that the finger placed on one side of the calvarium may be seen from the other side as a deep shadow.

The distance from the angle *d* to the opposite angle of the calvarium, made by the saw, is 15 cm. The widest transverse diameter of the calvarium is 16 cm. The longest antero-posterior diameter is 18 cm. The cut of the saw posteriorly passes through the upper part of the lambdoid suture; anteriorly it is 9 cm. from the highest part of the coronal suture.

Fig. 2.—Photograph showing the pronounced hydrocephalus which caused the atrophy of the inner table of the skull in areas corresponding to the cerebral convolutions.

**SUGGESTIVE OBSERVATIONS IN RELATION TO THE
INCUBATION PERIOD OF ACUTE ANTERIOR
POLIOMYELITIS.**

By D. W. CURRIE, M.D., B.Sc., D.P.H.,

AND

EDWIN BRAMWELL, M.B., F.R.C.P. Lond. and Edin.

Introductory.—Acute anterior poliomyelitis is now generally regarded as an infective disease. The causative agent, however, remains as yet undiscovered. Clinical data have been accumulating within recent years which indicate that the disease may be transmitted by direct contagion, while there are recorded observations which suggest that the infection may be carried by a third person. Reported instances which permit of deductions as to the incubation period of the disease are scanty. The following observations, based on cases which recently occurred in the practice of one of us (D. W. C.), are of exceptional interest and importance in this connection

The Harvieston Epidemic.—The Home Farm of Harvieston is situated on the private estate of that name in the county of Clackmannanshire, two miles from the town of Tillicoultry (pop. 3600). It lies at some distance from the public thorough-

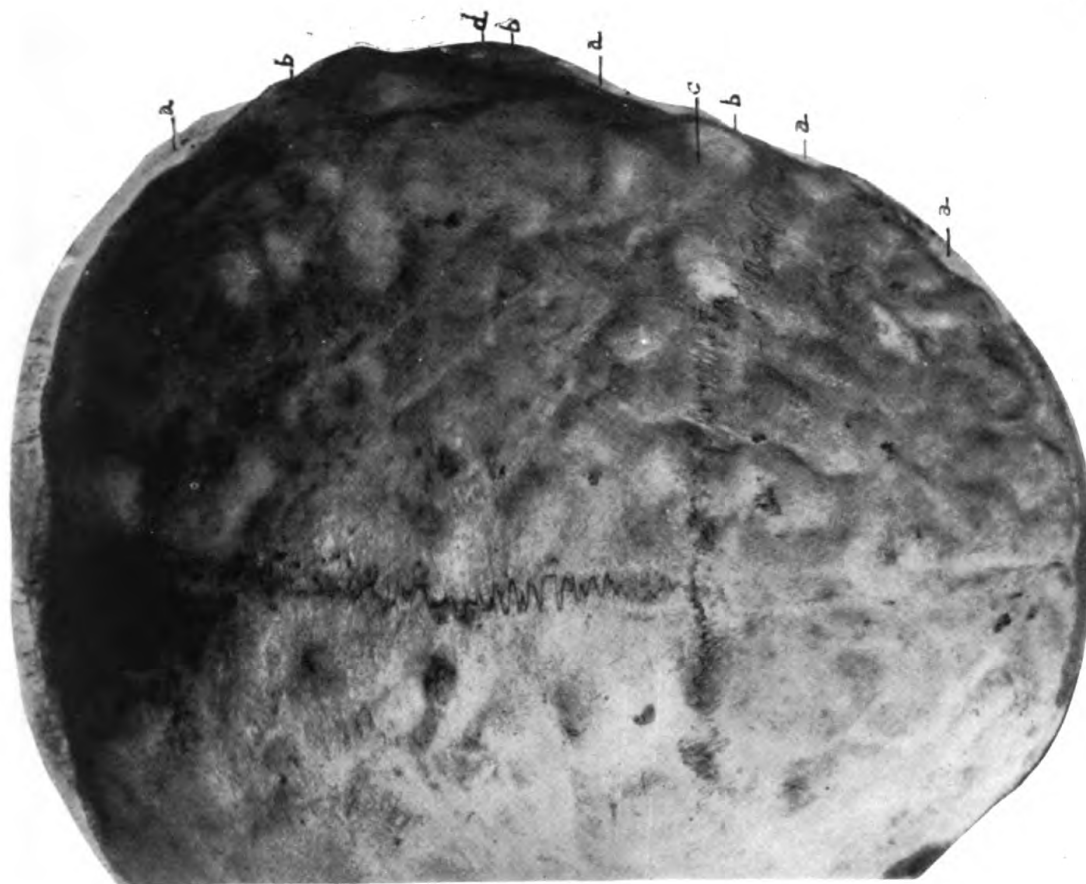


FIG. 1.



FIG. 2.

To illustrate Dr Spiller's Paper.

fare. The farmstead consists of four houses, which we may conveniently designate A, B, C, and D.

House A is occupied by the factor or land-steward, the three adjacent cottages by farm employees and their families.

The A family consists of 2 children (A. A., aged 5, and B. A., aged $2\frac{1}{2}$).

„ B „ 4 „ (A. B., aged $7\frac{1}{2}$; B. B., aged $5\frac{1}{2}$; C. B., aged 4; and D. B., aged 7 months).

„ C „ 4 „ (All above 8 years of age).

„ D „ 2 „ (Aged 2 years and a few months respectively).

Five of the children in these four houses were attacked (A. A., B. A., A. B., B. B., and D. B.). The children were taken ill in the following order:—B. B. (Sept. 12th), A. B. (Sept. 16th), D. B. (Sept. 18th), B. A. (Sept. 20th), and A. A. (Sept. 24th).

We shall not refer in any detail in this communication to the symptoms of the individual cases further than is necessary to demonstrate that they all undoubtedly are to be included under the category of acute anterior poliomyelitis or encephalitis of the epidemic type.

RESUMÉ OF THE CLINICAL HISTORIES.

Case 1.—B. B., aged $5\frac{1}{2}$, came home from school on the 12th and 13th of September complaining of headache; on the 14th, as the headache was still present and as he was feverish, he was kept in bed. He complained of pain in the back of the neck and legs, "held his head back," and was drowsy and heavy all day. The fever continued till the 16th. On the 19th, when he was allowed to get up, he said his legs felt very tired, and it was noticed that he had difficulty in holding up his head, which was inclined to the right side. On September 26th he returned to school.

Case 2.—A. B., aged $7\frac{1}{2}$, complained of headache on September 16th. When she returned from school that afternoon she said that her legs felt very tired. She was feverish. The fever lasted for two or three days. Her mother stated that she had said her neck felt stiff, and that she held her head far back. She complained of severe pain in the legs, more particularly the

right. On the third or fourth day of her illness weakness of the legs was observed.

When examined on October 31st there was almost complete paralysis of the right leg, while some of the movements on the left side, more particularly flexion at the hip, were defective. The paralysed muscles were markedly hypotonic, but there was little apparent wasting. The knee and ankle jerks on the right side were absent, while those on the left, although present, were only with difficulty elicited. The right plantar reflex was absent, while the left was of the flexor type. There was no sensory disturbance and no involvement of the muscles of the trunk or upper limbs. The cranial nerves were normal.

Case 3.—D. B., aged 7 months, was fretful and feverish on September 18th. The fever persisted for three days. "His head went back too, it affected them all the same." On September 20th a convergent strabismus was noted. On October 31st, saving for the strabismus above referred to, he appeared to be perfectly well.

Case 4.—B. A., 2½, complained of headache and was feverish on September 20th. On the 24th it was observed that the right side of his face was paralysed. Throughout the 25th he was drowsy and could only be awakened with difficulty. A slight degree of right facial weakness was still present on October 6th, although there was no evidence of paresis elsewhere and no alterations in the reflexes. The patient was running about quite well on October 31st, all trace of the paralysis of the facial muscles having by that time disappeared.

Case 5.—A. A., aged 5, was taken ill on September 24th with headache, fever, and a tired feeling in the legs. On the 28th she vomited several times, and, from her mother's description, there appears to have been some head retraction. She complained of pain in the legs and right arm. Two or three days afterwards her right arm and a day later her legs were found to be paralysed. There was for a few days slight loss of control over the sphincter of the bladder. When examined on October 31st both lower limbs were found to be completely paralysed save for slight movement of the toes on the right side, while there was considerable weakness of the right arm, more especially of the movements at the shoulder joint. The paralysed muscles were flaccid and there was some wasting. The plantar reflexes

and the tendon jerks of the lower extremities were absent. The cranial nerves were normal, and with the exception of a slight degree of tenderness complained of when the lower limbs were handled, no objective sensory disturbance was detected.

REMARKS.

There can be no question that in all five cases the symptoms were due to the same morbid process. A. B. and A. A., alone however, presented the typical sequelæ of an attack of acute anterior poliomyelitis. The other cases are to be classed as abortive examples of the affection.

This localised epidemic is of special importance from the data it affords bearing upon the incubation period of the disease, assuming that the disease is only contagious after the appearance of its earliest manifestations. The facts in this connection are as follows :—

Firstly. The circumstances that A. B., B. B., and C. B. slept not only in the same room but in the same bed, and that A. B. was taken ill on September 16th, *four days* after B. B., are very significant. The strong probabilities would seem to be that A. B. was infected by B. B.

Secondly. D. B., who slept in a cradle in the same room as his father and mother, first manifested symptoms on September 18th. He might have been infected by B. B. or A. B. In this relation it is very interesting to note that on and after September 14th, *four days* before D. B. was taken ill, B. B. slept in the same room as his mother and D. B. From September 16th onwards A. B., B. B., D. B., and Mrs B. slept in one room, while C. B. and Mr B. slept in another.

Thirdly. Since A. A. and B. A. slept in the same room the strong probabilities are that A. A. was infected by B. A. Here, again, it is of great interest to note that an interval of *four days* elapsed between the first manifestation of the disease in these two cases.

The question arises, Whence came the infection in the case of B. A. ? The A.'s, it will be noted, were taken ill after the B.'s. If, as the evidence certainly seems to forcibly suggest, A. B. was infected by B. B., D. B. either by B. B. or A. B., and A. A. by B. A., it seems only reasonable to conclude, having regard to the time

interval, that B. A. was in all likelihood infected by the B. family. Very positive statements were made by both Mrs A. and Mrs B. to the effect that neither of the A. children were in the B.'s house and none of the B. children in the A.'s house after B. B. was taken ill.

Is there any reason for supposing that the infection may have been carried by a third person? Mrs A. states that on September 16th, and again on the 18th and 19th, she visited the B.'s house, and that on the two dates last mentioned she remained on each occasion in the house for several hours assisting to nurse the baby (D. B.). This circumstance, when taken in conjunction with the negative facts above referred to, certainly suggests the possibility that she may have carried the infection. If this is so, it is probable that here also the incubation period was four days or less.

Among a number of other points of interest in connection with these observations, there are only one or two to which we shall refer.

It is worthy of note that all the children were of a robust type, that all were in good health, that the onset was in no instance associated with coryza or diarrhoea, and that no abnormal mortality was at the time observed among the poultry or farm stock. Since climatic influences have been regarded as of etiological moment, it may be mentioned that the rainfall in this part of the country was very much above the average during the last fortnight of August and first few days of September, while after this date the weather was fine, but not abnormally hot.

The original source of infection is a problem in relation to which we are not in a position to offer an opinion. Three additional cases of acute anterior poliomyelitis occurred about the same time in the town of Tillicoultry, the dates of onset being September 15th and 20th and October 7th. Two of these cases occurred in the practice of Dr Johnstone, by whose kind permission we were enabled to examine them. The two earlier cases occurred in children, aged seven months and two years respectively. In neither instance was a brother or sister attending the school, and we can trace absolutely no connection between these two cases and those at Harvieston. Further, we have good grounds for believing that these three cases are the

only cases which have been observed in Tillicoultry for some years back. Again, neither the A.'s nor B.'s have, so far as they are aware, been in contact with anyone suffering from the disease or with any possible carrier of infection. There can be no question, however, that cases of acute anterior poliomyelitis have been more numerous than usual in many parts of the country during the past autumn.

Summary.—The following conclusions are, in our opinion, justifiable deductions from the observations here recorded :—

1. The cases above described are characteristic of the epidemic type of acute anterior poliomyelitis.

2. The facts recorded afford very suggestive evidence to the effect that the disease is contagious, and that the incubation period in the cases described was four days or less.

3. The instance here reported, although not conclusive, supports the view that the infection may be carried by a third person.

Abstracts

ANATOMY.

THE MORPHOLOGY AND EVOLUTION OF THE CELLS OF

- (1) CAJAL. (*Morphologie et évolution des cellules de Cajal.*)
G. MARINESCO and T. MIRONESCO, *Journ. de Neurol.*, Oct. 20, 1910.

THE first layer, or zonal layer, of the human cerebral cortex was supposed not to contain any nerve cells, until Cajal, in 1890, demonstrated a series of cells in this layer which differed considerably in size and in the number and distribution of their processes. Since they were first described several observers have found them in foetal brains, but most of them were supposed to undergo regressive changes and to disappear before or soon after birth and none could be found in adult brains excepting in the hippocampal region.

The authors of this paper have demonstrated that they appear very early in foetal life, that they persist throughout life to old age and are present in all parts of the cerebral cortex. The cells lie usually near the surface of the cortex but some have been seen in the deeper parts of the zonal layer. Regressive changes

occur in some but are not present so frequently as stated by Ranke.

Nothing is known of their function, but the authors consider that the variations in their morphology, the existence of different types of cells and of tangential fibres in connection with them, tend to prove that these cells form a definite system and are of great importance in the psychic life of the foetus.

R. G. Rows.

PATHOLOGY.

INVESTIGATIONS RELATING TO THE LIPOID PIGMENT OF

- (2) **THE NERVE CELLS.** (*Untersuchungen über das Lipoid Pigment der Nervenzellen.*) MÜHLMANN, *Virchow's Archiv*, Bd. 202, Heft 1, p. 153; Heft 2, p. 161.

THERE are two chief views as to the mode of formation of the lipid pigment in the nerve cells. The one looks upon this as an "abnutzungsprodukt" of the cell, i.e. that a granular fat synthesis takes place, in which the deposit of lipid matter is a storehouse for the nutrition of the cell. The other holds that it is a product of the metabolism of the cell plasma and therefore a regressive appearance. The author, having noted many facts, e.g. the variation in the distribution of the lipid pigment granules in the central nervous system and the similarity in different individuals, which seemed unintelligible according to either the "abnutzungstheorie" or the "abreibungstheorie," undertook a study of the pigment-formation in nerve cells, which, though varying quantitatively, yet exercise the same function.

For this purpose the fifth and sixth cervical segments of eighteen spinal cords were taken, the number of motor cells determined, and those that were pigment-rich, pigment-poor, and pigment-free counted. To avoid errors, such as the counting of the same cell twice, the pigment-content of the transverse sections of the cord in serial preparations (Marchi paraffin sections at 5 μ) was determined. Great difficulty was experienced in defining the amount of pigment, for there could be no absolute standard, and it sufficed to assume the relative proportion in the amount of pigment on the right and left sides. Most of the cords belonged to labourers, but no exact anamnesis, e.g. whether right- or left-handed, could be obtained.

The result of this investigation was exactly the reverse to what might be expected from the "abnutzungstheorie," for the right—the more active side—had less pigment in sixteen out of the eighteen cases. In a further examination of the first lumbar

segment somewhat contradictory results were obtained. An analogous count was then made of the cells of the hypoglossus nucleus in nine cases, and in eight the right side was less pigmented than the left.

To explain these results it is suggested that the pigment-formation is a result of the nutritive disturbance which arises in the co-operative activities of the cell. The pigment-granule formation is lessened when the nourishment of the cell is improved and increased when that is diminished. An increased activity of the cell, thanks to the stimulated blood flow, improves the nutrition, and, therefore, the more active right side of the cord which innervates the right arm must contain a less amount of the regressive metabolic products than the left side.

This view fails to explain the alterations in nutrition which the cells undergo in the course of development and of age.

JAMES W. DAWSON.

LESIONS OF THE CERVICAL SYMPATHETIC IN EXOPHTHALMIC GOITRE.

- (3) **THALMIC GOITRE.** (*Lésions du Sympathique Cervical dans le Goitre Exophtalmique.*) HORAND, *Rev. Neurol.*, Oct. 15, 1910, p. 344.

THIS is a description of the right superior cervical sympathetic ganglion in a case "d'un goitre exophtalmique typique." On section the ganglion was found sclerosed with atrophic changes in the nerve cells, which were greatly diminished in number.

A. NINIAN BRUCE.

THE NERVOUS SYSTEM IN CHRONIC ALCOHOLISM. F. W.

- (4) MOTT, *Brit. Med. Journ.*, Nov. 5, 1910, p. 1403.

THE author distinguishes three groups of alcoholic psychosis :

1. Mental effects of alcoholism on previously healthy brains, *i.e.* delirium tremens and Korsakow's polyneuritic psychosis.
 2. Mental effects resulting from alcoholism in an individual, either potentially insane or possessing a morbid temperament.
 3. Cases in which groups 1 and 2 are more or less combined.
1. He regards the polyneuritic psychosis as an indirect effect of alcohol, and as probably more dependent on microbial toxins or effects of faulty metabolism. This conclusion is based partly on the similarity of the psychosis to the delirium of fever and to

toxic insanity, and partly on the fact that an identical psychosis may be caused by metallic poisons, and toxic blood conditions in influenza, phthisis, septic infection, and diabetes.

He has found the following histological changes in the disease:— Perinuclear chromatolysis of the psychomotor cells; atrophy of the fibres in the super-radial and tangential systems, and to a less extent in the inter-radial systems; and numerous small hæmorrhages in the cortex in acute cases.

The brains do not show atrophy of the convolutions as in general paralysis, and the cerebro-spinal fluid contains no excess of albumen or lymphocytes.

2. In most cases of alcoholic insanity there is reason for thinking that alcohol is not the chief causal agency, as the patients show marked signs of degeneracy. In many cases the mental state predisposes to alcoholism. In others the duration and degree of the alcoholic excess is relatively slight. The author remarks on the rarity of "alcoholic cirrhosis" in such cases.

J. GODWIN GREENFIELD.

PSYCHOLOGY.

SUGGESTIONS ON THE PSYCHOLOGY OF SUPERSTITION.

(5) DRESSLAR, *Amer. Journ. of Insanity*, Oct. 1910, p. 213.

SOME valuable statistics are here published regarding the astonishing prevalence of gross superstition among an educated class. The author's general remarks on the subject will be uninteresting to those who have read Freud's exposition of the subject, of which he seems not to be aware.

ERNEST JONES.

CLINICAL NEUROLOGY.

SERODIAGNOSIS OF SYPHILIS. VICTOR COX PEDERSEN, N.Y.

(6) *Med. Journ.*, May 7, 1910.

THE article extends through four numbers, and cannot be adequately abstracted. It is a very comprehensive and painstaking piece of work, and should be read in the original form by those interested.

D. K. HENDERSON.

SERUM DIAGNOSIS OF SYPHILIS. WILLIAM LITTERER, N.Y.

(7) *Med. Journ.*, July 23, 1910.

THE conclusions arrived at are as follows:—

1. In every branch of medicine, the Wassermann test is of

inestimable value as corroborating or dispelling the suspicion of an active specific disease.

2. A positive reaction means that an active syphilis exists, and indicates anti-syphilitic treatment.

3. Since anti-syphilitic treatment invariably causes the disappearance of the Wassermann reaction, it may be an index as to the efficiency of a line of treatment.

4. There are some non-luetic blood sera which cause a fixation of the complement. These sera are, however, so rarely met with that they do not vitiate the clinical value of the reaction.

D. K. HENDERSON.

THE NOGUCHI REACTION IN SERODIAGNOSIS. WILBUR M.

(8) PHELPS, *N.Y. Med. Journ.*, July 23, 1910.

NOGUCHI found that Wassermann's original method was subject to error arising from the presence in human serum of a varying amount of natural anti-sheep amboceptor, which would hæmolyse the sheep corpuscles used, and prevent the detection of small amounts of syphilitic antibody. In Noguchi's method this error is eliminated because human corpuscles are used in combination with human serum, and no foreign natural hæmolytic amboceptor is accidentally present. The author has examined the blood serum of fifty-four patients by Noguchi's method, and obtained the following results:—

	Positive.	Negative.
18 Normal Sera	0	18
1 Primary Chancre	1	0
9 Secondary	9	0
9 Tertiary	5	4
16 Suspected Cases without Specific Histories	7	9
1 Non-Specific Spinal Fluid	0	1

D. K. HENDERSON.

THE WASSERMANN REACTION IN THE BLOOD AND CERE-

(9) **BRO-SPINAL FLUID AND THE EXAMINATION OF THE SPINAL FLUID IN GENERAL PARALYSIS AND OTHER FORMS OF INSANITY.** WINIFRED MUIRHEAD, *Journ. Ment. Sc.*, Oct. 1910.

In this paper is a brief summary of the results obtained in an examination of thirty-five cases of general paresis in all stages, and seventy-seven cases of psychoses other than paresis, for the

Wassermann reaction, proteid content and presence of a lymphocytosis. The original method of Wassermann was used and a quantitative estimation was made. The reaction was found positive in 76·7 per cent. in the blood serum and 71·4 per cent. in the spinal fluid of paresis; it was negative in the serum and spinal fluid of all other psychoses with the exception of a case of insanity associated with Addison's disease, who was tuberculous, and in whom a partially positive reaction was obtained in both instances. The conclusion drawn was that the absence of the Wassermann reaction does not negative that the case may be one of paresis.

The proteid content of the spinal fluid was ascertained by two tests, viz., Noguchi's butyric acid reaction and Ross Jones' saturated ammonium sulphate reaction. They are both precipitative reactions, and demonstrate the presence of globulin, and the results obtained by them were identical. In thirty-seven cases of paresis, thirty-three reactions were positive and in two cases partially positive. The intensity or delicacy of the reaction was found to bear no relationship to the Wassermann reaction. In the seventy-seven cases of other psychoses the reactions were positive in 27 per cent. and partially positive in 18·1 per cent., with no history or symptoms of syphilis, congenital or acquired, which demonstrates that this reaction is not absolutely specific for general paresis, and that in other insanities chemical changes are present in the spinal fluid. The quantitative estimation of albumen in the spinal fluid was also ascertained. It was found greatest in paresis, averaging 0·2 per cent., whilst in other psychoses the amount varied between 0·025 per cent. and 0·1 per cent. It would appear that the amount of proteid present does not coincide with a positive or partially positive Wassermann reaction.

The cytological examination of these 112 cases revealed an increase of lymphocytes present only in general paresis, and appeared to bear no relationship to the proteid reaction or to the Wassermann reaction; therefore an increase of lymphocytes was found to be the most constant sign of general paresis. In all cases the cells were counted by "Ernest Jones'" field method.

The substance reducing Fehling's solution in the spinal fluid, although varying in its powers of reduction, was never absent in the total 112 cases of insanity examined.

AUTHOR'S ABSTRACT.

ON THE TREATMENT OF SYPHILIS WITH EHRLICH'S PRE-

(10) **PARATION 606.** (Die Behandlung der Syphilis mit dem Ehrlichschen Präparat 606.) NEISSER, EHRLICH, ALT, etc., *Deut. med. Wchnsch.*, Oct. 13, 1910.

THIS number of the *Wochenschrift* is devoted entirely to the report of the discussion on treatment by the new remedy "606," which took place at Königsberg on September 20, 1910. The following are extracts from the communications of the various workers.

Neisser (of Breslau) gives a historical account of the recent advances in the investigation of syphilis, and discusses the general principles of the new treatment, alone or in combination with other forms of treatment.

Ehrlich (of Frankfurt) in his communication recommends that in nervous diseases the dose remain small, not over .4 gram.

Alt (of Uchtsprunge) gives the history of his collaboration in the therapeutic testing of 606. In advanced cases of tabes and general paralysis the treatment is useless; in the early stages it is indicated. Cerebral lues, even in old cases, is a suitable disorder for the treatment; large doses are to be avoided. For very excited cases of mental or nervous disorders he recommends intravenous injection, under narcosis if necessary. He is certain that many cases of incipient tabes derive benefit from the remedy. He has never seen 606 cause any disorder of the optic nerve in tabetics.

C. MACFIE CAMPBELL.

EHRLICH'S REMEDY FOR SYPHILIS. S. J. MELTZER, *N.Y. Med.*

(11) *Journ.*, Aug. 20, 1910.

EHRLICH has recently perfected a remedy called "606," one injection of which is said to free the body from the spirochætes in less than twenty-four hours, and cures primary, secondary, and tertiary lesions in two weeks or less.

All seem to agree that one injection accomplishes more than a radical mercurial treatment for one year, and that just such cases as do not respond to mercury and other treatment, respond promptly to this new remedy.

Professor Alt is said to have used it in cases of tabes, paralysis, and epilepsy of syphilitic origin with gratifying results.

According to some observers, the Wassermann reaction has become negative in 100 per cent. of the cases, while according to others 40 per cent. and less become negative.

The writer has seen no bad results following its use.

D. K. HENDERSON.

DAS NEUESTE EHRLICH-HATAPRÄPARAT GEGEN SYPHILIS.

- (12) K. ALT (of Uchtsprunge), *Münch. med. Wchnsch.*, March 13, 1910.

UNSERE BISHERIGEN ERFAHRUNGEN MIT DEM EHRLICH-

- (13) **HATASCHEN ARSENPRÄPARAT "606."** C. HÜGEL und A. RUETE (of Strassburg), *Münch. med. Wchnsch.*, Sept. 27, 1910.

ÜBER 156 MIT EHRLICH-HATA 606 BEHANDELTE FÄLLE.

- (14) FAVENTO (of Trieste), *Münch. med. Wchnsch.*, Oct. 4, 1910.

BEOBACHTUNGEN AN 503 MIT DIOXY-DIAMIDO-ARZEN-

- (15) **BENZOL BEHANDELTEN KRANKHEITSFÄLLEN.** WECHSELMANN (of Berlin), *Deut. med. Wchnsch.*, Aug. 11, 1910.

ERFAHRUNGEN UND ERWAGUNGEN MIT DEM NEUEN

- (16) **EHRLICH-HATASCHEN MITTEL BEI SYPHILITISCHEN UND METASYPHILITISCHEN ERKRANKUNGEN.** C. TREUPEL (of Frankfurt), *Deut. med. Wchnsch.*, July 28, 1910.

WEITERE ERFAHRUNGEN BEI SYPHILITISCHEN, PARA-

- (17) **UND META-SYPHILITISCHEN ERKRANKUNGEN MIT EHRLICH-HATA INJEKTIONEN.** C. TREUPEL (of Frankfurt), *Deut. med. Wchnsch.*, Sept. 27, 1910.

BERICHT ÜBER DIE BISHERIGEN RESULTATE DER BEHAND-

- (18) **LUNG DER SYPHILIS MIT DEM PRÄPARATE VON EHRLICH-HATA (120 FÄLLE).** W. PICK (of Vienna), *Wien. klin. Wchnsh.*, Aug. 18, 1910.

In the numerous reports of the results obtained by the injection of the Ehrlich-Hata preparation "606," diseases of the nervous system are referred to very briefly, and few cases are reported in detail; the time which has elapsed since the discovery of the remedy has also been too short for very definite conclusions to be arrived at. The following results are mentioned in the above communications.

Alt injected twenty-three patients, chiefly cases of general paralysis; of eighteen with positive Wassermann reaction, in two it disappeared, in two it showed marked diminution, in three it showed definite diminution. The general weight of the patients increased. In general paralysis the elimination of the arsenic is slow.

Hügel and Ruete treated one case of lues cerebri with .5 gram;

some improvement in the pupillary reaction was observed. One case of incipient general paralysis showed no change after the injection.

Favento injected twelve cases of cerebral syphilis, eight cases of parasyphilis (general paralysis and tabes); in the latter no definite improvement was observed, although the pains disappeared in three cases. No improvement was noticed in old cases of syphilitic endarteritis.

Wechselmann treated several cases of cerebral syphilis and parasyphilis. Three cases of apoplexy of syphilitic origin showed definite improvement (no details). In a case of abducens paralysis with diplopia and Argyll Robertson pupils the sight improved very much, and it is claimed that the reaction to light returned. In several cases of tabes, after the injection the pupillary reaction to light quickly improved; various pains disappeared; in one case impotence was cured; in one case bladder control, which had been lost for eight years, was regained a few days after the injection. In no case did the drug affect the optic nerve unfavourably. The author does not emphasise unduly the fact that in some cases of general paralysis the patients and their relatives claimed improvement after the injection.

Treupel (first communication) noted transitory distinct improvement of the mental symptoms in a case of incipient general paralysis; in a case of apoplexy, six years after the infection, with bilateral ptosis, paralysis of the 3rd and 6th on one side, considerable improvement was noted after an injection of .3 gram of 606.

Treupel (second communication) claims prompt improvement in cases of recent cerebral syphilis, with disappearance of paralyses and of beginning choked disc. He reports the case of a young man with right-sided paresis, papillitis, ataxia, and sign of Romberg; two weeks after the injection normal gait, no paresis, no papillitis. Nineteen cases of tabes and progressive paralysis were treated. The author is of opinion that the patients improved after the injection. In tabes the sensory disorders became less, in general paralysis a better mental level was reached. In one case control of the bladder improved.

Pick found himself forced to treat various cases of nervous diseases with the new preparation; he injected twenty-seven patients, among whom were several tabetics and general paralytics. He was not convinced that any definite improvement took place. In one case of cerebral syphilis, after the injection mental and physical improvement was noted.

C. MACFIE CAMPBELL.

MYOSITIS OSSIFICANS. J. K. MITCHELL, *Journ. of Nerv. and Ment. Dis.*, Sept. 1910, p. 547.

THE case reported is noteworthy for a rapid onset and for the marked improvement brought about by thorough massage.

ERNEST JONES.

MYASTHENIA GRAVIS. SCHLAPP and WALSH, *Journ. of Nerv. and Ment. Dis.*, Sept. 1910 p. 552.

A TYPICAL case of this condition, in a woman of 24, is briefly recorded; it was fatal. The authors suggest that a fright may have been instrumental in determining the onset of the disease.

ERNEST JONES.

ON INFANTILE ALCOHOLIC NEURITIS. (Ueber infantile Alkohol-neuritis.) HERMANN EICHHORST, *Correspondenz-Blatt für schweizer Aerzte*, Oct. 20, 1910, No. 30, XL. Jahrg.

THE experiences of Dr Eichhorst in the medical clinic at Zurich does not bear out the view frequently expressed that alcoholic neuritis is relatively more frequent in men than in women.

In this paper the author gives an account of a case of alcoholic neuritis in a boy 8 years old. For two years before admission to hospital the patient had complained of pains in the lumbar region. In addition to this an increasing weakness in the muscles of the legs and back was present. The boy presented the clinical appearance of a case of progressive muscular pseudo-hypertrophy. No disturbance of sensibility of the skin of the legs and gluteal region was detected. Patellar reflexes were lively, and the plantar and tendo-Achilles reflexes were not altered. The boy could perform any movement of the thighs or legs, but the strength of these movements was small. Electrical examination of the nerves and muscles of the lower limbs showed no change requiring special notice, except a diminution in the idio-muscular irritability in the calves towards faradic and galvanic currents.

After the boy had been several months in hospital it was discovered that he had been a brandy drinker, and that since his admission to hospital he would get up secretly during the night and help himself to the spirit in a laboratory lamp, or empty a flask of spirit used for cleaning windows. He confessed to having had an incontrollable thirst for alcohol since his earliest childhood.

Previous to the discovery of his habits treatment consisting

in massage, baths, and the administration of potassium iodide produced little effect, but after withdrawal of alcohol improvement set in, and eventually a complete cure resulted.

After dismissal from the hospital he was seen at intervals of one and two years, when it was found he had developed well, that all disturbances in locomotion had disappeared, and that he had completely abstained from alcohol.

A. HILL BUCHAN.

SYPHILITIC POLYNEURITIS. (*Polynévrite syphilitique.*) L. M.

(22) BONNET and LAURENT (of Lyons), *Ann. de dermat. et de syph.*, 1910, p. 433.

A MAN, aged 31, was admitted to hospital in May 1909 with an abundant eruption of ulcero-crustaceous syphilides and a neuritis of both upper and lower limbs. He had contracted syphilis in 1904, which he had left untreated until 1907, when he developed perforation of the palate and transient paralysis of the right arm and levator palpebræ, for which he was treated with mercury biniodide pills. A month after admission to hospital in 1909 intramuscular injections of mercury biniodide were given on alternate days, and in thirty-nine days the nervous symptoms had entirely disappeared. Though alcohol may possibly have favoured the action of syphilis, the writers do not think that the neuritis was alcoholic or even of mixed causation, since, in spite of deprivation of alcohol, the condition became steadily worse until mercury was given.

The writers summarise their conclusions as follows:—

1. Syphilis sometimes causes a polyneuritis similar to that seen in other infections and intoxications. Only a small number of genuine cases exist, *e.g.* those of Frugoni (*v. Review*, 1909, p. 267), Steinert (*ib.*, p. 779), and the present case.

2. Syphilitic polyneuritis usually appears in the first months of the disease, frequently coinciding with other specific manifestations, but it may also appear several years after the chancre.

3. In a few cases alcoholism has acted as a predisposing cause.

4. In some cases mercury has effected a rapid and complete cure. In others its action was weak or nil. Like Steinert, the writers do not think that mercury should be incriminated in such cases.

J. D. ROLLESTON.

MULTIPLE HERPES AND HERPETIC IMMUNISATION. (*Zona*

(23) *à localisations multiples et immunisation zonateuse.*)

H. GOUGEROT and H. SALIN, *Gaz. des Hôp.*, No. 131, p. 1785.

THE writers record a case in which the first eruption was preceded by severe constitutional disturbance and pains in the joints. The

eruption, which was remarkably intense and presented all the classical symptoms of herpes, occupied the area of the third lumbar root. There was severe pain at the site of the eruption, the right knee jerk was diminished, and lumbar puncture showed cerebro-spinal lymphocytosis.

Four days after the appearance of the eruption the patient complained of pain in both arms, especially in the wrists and hands, but of less severity than that in the right thigh. There was no constitutional disturbance. The following day two symmetrical eruptions appeared, one on each arm, occupying the areas of the eighth cervical and first dorsal roots. The acute stage of the second eruption lasted only three days, and by the sixth day both the pain and the rash had almost entirely gone. The difference in intensity of the two eruptions suggested the hypothesis of an immunity conferred by herpes zoster similar to that by other infectious diseases. The usually strict confinement of zoster to a single area suggests that this immunisation, as a rule, is rapidly produced, but that with a more virulent infection it takes place more slowly, as occurs in some cases of vaccinia. The partial immunity in the present case explains why the second eruption was less severe than the first. It is noteworthy that in zoster of multiple distribution a fresh eruption does not affect territory near the primary zone, the explanation of this being that the immunisation is at first local, and progressively extends to adjacent areas.

J. D. ROLLESTON.

ZOSTER WITHOUT ERUPTION. (Du zona sans eruption.) J. A. (24) SICARD, *Journ. de méd. de Paris*, 1910, No. 35, p. 593.

SICARD, in 1903, gave the name of zoster without eruption or abortive zoster to a condition characterised by a sudden onset, severe intercostal neuralgia and fever, cutaneous hyperæsthesia, and cerebro-spinal lymphocytosis, followed by complete recovery in two or three weeks. Such cases had been noted in houses or hospital wards in which ordinary zoster had recently occurred, so as to suggest the possibility of contagion.

J. D. ROLLESTON.

A CASE OF TABES AND MUSCULAR ATROPHY. E. L. HUNT, (25) *Med. Rec.*, May, 21, 1910.

THE combination of tabes and progressive muscular atrophy occurring in the same patient is quite rare; this is only the tenth case published.

The patient is a man, aged 44, who had probably contracted syphilis at the age of twenty-eight.

He shows Argyll Robertson pupils, absence of knee-jerks, presence of Romberg sign, and great ataxia in all extremities.

In addition he shows a progressive muscular atrophy, beginning in the hands and extending to the neck and scapular muscles, fibrillary twitchings, and a diminished electrical response.

D. K. HENDERSON.

**THE VISCERAL ANÆSTHESIAS OF TABES DORSALIS IN
(26) RELATION TO THE DIAGNOSIS OF ACUTE INFLAMMATORY CONDITIONS IN THE ABDOMEN. L. A.**

CONNER, *Journ. Amer. Med. Assoc.*, Oct. 22, 1910.

THE writer records a case of fatal perforative appendicitis with general peritonitis in a tabetic, where there was complete absence of abdominal pain and tenderness and no muscular rigidity. The patient, a man, aged 42, was admitted to hospital suffering from a feeling of malaise accompanied by rigors and high fever. Examination revealed the fact that he was suffering from tabes dorsalis, but nothing could be found to account for the acute symptoms. He survived for seven days, and during this time repeated careful examinations failed to detect any infective trouble, although his temperature remained high and his pulse and leucocytosis steadily mounted. On the day before death his abdomen was somewhat swollen and tympanic, but remained perfectly soft and free from tenderness on pressure. An autopsy showed the presence of generalised suppurative peritonitis, due to a partly gangrenous and perforated appendix.

The writer discusses the subject of visceral anæsthesias in tabes dorsalis, and draws attention to the fact that complete anæsthesia of both testicles occurs in about 50 per cent. of cases, and that "epigastric sensibility" is completely lost in 20 per cent. of all cases. He believes that the lesions described by Roux in the fibres of the sympathetic system passing from the viscera to the spinal cord account for the visceral anæsthesias met with in tabes.

D. P. D. WILKIE.

**REPORT OF A CASE OF RESECTION OF DORSAL SPINAL
(27) NERVE ROOTS FOR GASTRIC CRISES OF TABES.**

J. J. THOMAS and E. H. NICHOLS, *Journ. of Nerv. and Ment. Dis.*, Oct. 1910, p. 593.

AFTER discussing the theory of gastric crises, the authors report the case of a man of 30 who for eight years had been suffering

from severe gastric attacks; there were signs of tabes present. The seventh, eighth, ninth and tenth roots on each side were divided. In the next two months there was no gastric pain, but a few attacks of vomiting, possibly due to abstention from morphine.

ERNEST JONES.

ACUTE EPIDEMIC INFANTILE PARALYSIS. (Die akute (28) epidemische Kinderlähmung.) J. GROBER, *Die deutsche Klinik*, Bd. XIII., Engänzungsband II., S. 70.

THIS paper is one which would make an admirable up-to-date text-book article on Poliomyelitis. This sufficiently indicates its scope; to abstract it is as unnecessary as impossible.

J. H. HARVEY PIRIE.

TUMOURS AND CYSTS OF THE SPINAL CORD, WITH A (29) RECORD OF TWO CASES. C. K. MILLS, *Journ. of Nerv. and Ment. Dis.*, Sept. 1910, p. 529.

THE first case was that of a woman, aged 33, who for two years had suffered from pain in the neck, with, later, left-sided paresis, sensory changes in the arm and signs of pyramidal affection. An intradural endothelioma at the level of the fifth and sixth cervical segments was removed, and recovery followed. The symptoms passed away, but after the operation eye signs of injury to the cervical sympathetic appeared.

The second case was that of a man, who for more than six months had suffered from pain in the back with slight bladder trouble. After four months he developed a complete paraplegia with cystitis. A pial cyst at the level of the seventh and eighth dorsal vertebræ was successfully removed, but the patient died some months later from the effects of the cystitis.

Some general remarks on diagnosis, with short references to the literature, conclude the article.

ERNEST JONES.

INTRADURAL CYST OF THE SPINAL MENINGES REMOVED (30) BY OPERATION. RECOVERY OF THE PATIENT. C. S. POTTS, *Journ. of Nerv. and Ment. Dis.*, Oct. 1910, p. 621.

THE chief point of the article is a discussion of the spinal localisation of testicular sensibility. The patient had testicular analgesia, which disappeared after the removal of a cyst over the eleventh and twelfth dorsal and first lumbar segments. The author thinks that Head's localisation (D. 10) is too high and Müller's (L. 1) too low.

ERNEST JONES.

**IDIOPATHIC CIRCUMSCRIBED SPINAL SEROUS MENINGITIS,
(31) WITH REPORT OF A SUCCESSFUL OPERATION CASE.**

WEISENBURG and MÜLLER, *Amer. Journ. Med. Sc.*, Nov. 1910,
p. 719.

It is only since 1903 that this condition has been recognised as a distinct disease. Early diagnosis is important, because operation affords prompt relief. The usual diagnosis prior to operation—as in the case here recorded—has been that of tumour of the spinal cord. In the majority of the cases there exists, in addition to the serous meningitis, some primary underlying disease to which the former is secondary, but undoubtedly cases do occur in which no such associated condition is present. Some cases are due to traumatism, and others have been attributed to gonorrhœa and to influenza. At the operation the dura is found to be tense, blue and congested, and does not pulsate. When it is incised a little fluid escapes, and the more or less opaque distended pia projects through the dural incision. When the pia is opened fluid spurts out under considerable tension. The symptoms are due to a somewhat diffuse pressure on the posterior part of the cord, and are at first of a sensory nature—hot, burning, and tingling sensations usually not localised to root distribution; and a characteristic hyperæsthesia over the whole limb. The symptoms are at first unilateral, but tend to become bilateral. Anæsthesia, if present, is of a varying and irregular nature. There is weakness of the limbs, which are sometimes in a spastic and sometimes in a flaccid state. Variation of all the symptoms at successive examinations is a noteworthy feature. In some cases incontinence of urine and fæces has been present. The case recorded was traumatic in origin and occurred in a female aged twenty. An excellent result followed operation.

HENRY J. DUNBAR.

**COMPRESSION OF THE SPINAL CORD CAUSING PARA-
(32) PLEGIA AND ITS SURGICAL TREATMENT. A.**

PRIMROSE, *Journ. Amer. Med. Assoc.*, Oct. 22, 1910.

FROM a study of fourteen cases of paraplegia from compression of the cord, caused by injury and disease, the writer draws the following conclusions:—

1. In cases of severe injury it is often impossible to determine whether the cord has been completely severed or no, and, therefore, where there is the least doubt, operation should be undertaken.

2. In cases of Potts' paraplegia, if no improvement be manifest

after three months' treatment by rest and extension, laminectomy should be performed.

3. When compression from a tumour is diagnosed, immediate operative interference should be recommended, and even if the growth be a syphilitic gumma, its removal by operation gives more satisfactory results than prolonged treatment by drugs will do.

4. All attempts to re-unite the cut ends of a severed cord have been uniformly unsuccessful in re-establishing the functional power of the distal segment.

D. P. D. WILKIE.

**THROMBOTIC SOFTENING OF THE SPINAL CORD AS A CAUSE
(33) OF SO-CALLED "ACUTE MYELITIS." H. CHARLTON
BASTIAN, *Lancet*, Nov. 26, 1910, p. 1531.**

THE author here sums up the evidence in favour of the view he has so longed urged, that the great majority of cases of "Acute Myelitis" are really thrombotic softening rather than true myelitis. The evidence is as follows: (1) The similarity of the morbid changes to those occurring in the brain which are due to thrombosis. (2) The existence of special conditions favouring the occurrence of thrombosis in the vessels of the spinal cord, and in just such parts of the cord as are most frequently affected. (3) The fact that the disease is most commonly met with in just such persons and under just such conditions as are known to be favourable to the occurrence of thrombosis. (4) The mode of onset and the early symptomatology are wholly different from what they would be had an inflammation of the cord actually existed. (5) The absence, in the majority of cases, of any reasonable cause of inflammation.

He also includes acute poliomyelitis as a disease, often thrombotic and not inflammatory; but as he takes no account of the recent work on this disease, the views in the latter part of the communication can scarcely be upheld.

J. H. HARVEY PIRIE.

**NOTE ON TUBERCULOUS MENINGITIS. W. B. WARRINGTON,
(34) *Lancet*, Dec. 17, 1910, p. 1754.**

THIS short paper deals chiefly with the invasion symptoms, when the disease occurs in adults. He records five cases, in only one of whom previous disease (chronic phthisis) was known to exist. In all there was an incubation period of three to four weeks, characterised by slight physical and mental symptoms of depression, strangeness in manner, or hysteroid attacks; then a

sudden change, a rapid onset of coma terminating, within a week, in death, the terminal stage also being, except in one instance, unaccompanied by obtrusive physical signs.

The examination of the cerebro-spinal fluid will in most cases clear up the diagnosis. He also gives a short note of a case of recovery from tuberculous meningitis, and of a case of the form known as meningo-encephalitis tuberculosa circumscripta.

J. H. HARVEY PIRIE.

A CASE OF TYPHOID MENINGITIS. B. SCHWARTZ, *Med. Record*, (35) 1910, ii., p. 760.

A RECORD of a case in a boy, aged 8 years, who died with symptoms of tuberculous meningitis in the third week of disease. Lumbar puncture, performed several hours before death, gave issue to a somewhat turbid fluid under high pressure. Very numerous typhoid bacilli and a marked increase of cellular elements were found in the sediment. No necropsy. A review of the literature is appended.

J. D. ROLLESTON.

CEREBRO-SPINAL MENINGITIS AND MENINGOCOCCAL CEREBRAL ABSCESS. (Meningite cérébro-spinale et abcès cérébral à méningocoques.) MONZIOLS and LOISELEUR, *Gaz. des Hôp.*, 1910, p. 1828.

A RECORD of a case in a young soldier, at whose necropsy the unexpected discovery was made of an abscess extending from the Rolandic fissure to the posterior part of the occipital lobe. Meningococci were found on direct examination of the pus. Unlike Flexner, the writers hold that meningococcal infection, as a rule, takes place by the blood, and that only in exceptional cases do the meningococci take the direct route to the meninges by the cribriform plate. By their recent investigations they have found that meningococcal septicæmia is not only present in severe, but also in quite mild cases, hæmatological examination having been positive in 90 per cent. Subcutaneous, or frequently intravenous serotherapy, in addition to intraspinal injections, is therefore indicated in some cases, and would probably have been beneficial in the present case.

J. D. ROLLESTON.

ON THE CAUSE OF NEUROPATHIC STATES. GEORGE (37) RUTHERFORD JEFFREY, *Brit. Med. Journ.*, Nov. 19, 1910.

THE paper begins with a resumé of a discussion by the members of the Societies of Neurology and Psychiatry in Paris, upon the part played by the emotions in the genesis of neuropathic states.

M. Déjerine there maintained that emotion was the sole cause of neurasthenia, and also that worry was a more potent factor than overwork. M. Babinski, his chief opponent, based his contentions upon observations he had made among members of the "Aero Club de France," and others who experienced conditions normally producing emotional stress, with apparent impunity.

Next, reference is made to M'Dougall's theory of fatigue, according to which the condition commonly called fatigue results from successive stimuli gradually elevating the resistance at the synapse till nerve impulses of average intensity can no longer pass the synapse to reach their respective perceptive centres in the cerebrum. The nature of this resistance is then discussed: It must arise from physical changes in the protoplasm of the synapse, and every physical change in a synapse is probably merely an accompaniment of a chemical change in the neuron. It is therefore reasonable to suppose that the resistance of the synapse is the index of the available energy of the neuron: the lower the resistance the higher the potential energy of the cell; the higher the resistance the lower the potential energy of the cell; that every nerve cell contains protoplasm which is capable of being readily broken up to liberate energy, and that the amount of this protoplasm is limited, peculiar to the cell, and dependent upon the ratio of the work done by the cell to its nutritive supply. The factors determining the incidence of fatigue were also discussed.

Emotion implies expenditure of nerve energy. Repetition within periods insufficient to permit the neuron completely to recuperate, great intensity and undue prolongation of emotion, all involve the same consequences—exhaustion of the normally available nerve-energy of the cell. Demands in excess of this normally available supply probably produces anatomical alterations in the structure of the nerve-cell and pathological mental states.

M. Déjerine's contention is that worry is a more potent factor than overwork, for whereas work must be an intermittent, worry may be a continuons drain upon the nerve energy; his further assertion that chronic causes are more important than sudden causes merely expresses the relative frequency of chronic strain and shock in a community. If the unemotional persons upon whom M. Babinski based his contentions were subjected to emotional stimuli of the same relative intensity to them as the incriminated stimuli were to the patients of M. Déjerine, neuro-pathic states would similarly result. The whole discussion emphasised what I have elsewhere maintained, the existence in neuropaths of an inherited or acquired predisposition—an emotional diathesis—with a definite structural or biochemical basis.

AUTHOR'S ABSTRACT.

**CASES ILLUSTRATING THE ORIGIN OF HYSTERICAL AND
(38) PSEUDO-HYSTERICAL SYMPTOMS. TOM A. WILLIAMS,
Amer. Journ. Med. Sci., Sept. 1910.**

IN describing these cases, the author wishes to confine himself to the essentials, and that only in so far as to convey a clear picture of what should be understood by hysteria, and to differentiate it from mythomaniac, psychasthenic and neurasthenic pseudo-hysterias. Thus heredity, family history, patient's previous history, and elaborate physical examination are not discussed, and the therapeutics is only indicated incidentally.

The criterion of hysteria adopted is that of Babinski,—undue suggestibility: and the following cases are discussed:—

1. Electric-shock palsy, a true hysteria by resuscitation of a submerged idea, which psycho-analysis revealed.
2. Examples suggested by simple medical examination.
3. Hysteria with anæsthesia, dreamy states, choleric impulses. The pathogenesis, revealed by psycho-analysis of dreams and in hypnosis. Treatment by persuasion and instruction.
4. Hysterical hemiplegia and aphasia, probably from medical suggestion. Differential diagnosis and treatment.
5. Mythomaniac mydriasis.
6. Spiritism and possession (Grasset). Discussion of his diagnosis of hysteria, and of his theory of the sub-conscious based on the polygon.
7. Simulated hysteria and amnesia, with mental debility, in a criminal. Methods of detection. Source of the symptoms. Discussion of simulation and mythomania and their relation to the hysterical constitution.

Relation of emotionalism and hysteria. Differentiation from psychasthenia. The psychasthenic convulsion. Cases of tic. Relation to dromomania and dipsomania. Relation to neurasthenia, which is not a psychic disorder. Pseudo-neurasthenia by suggestion.

AUTHOR'S ABSTRACT.

**GENESIS OF HYSTERICAL STATES IN CHILDHOOD, AND
(39) THEIR RELATION TO FEARS AND OBSESSIONS. TOM
A. WILLIAMS, *Medical Record (N.Y.)*, Aug. 6, 1910. (Trans.
1st Am. Nat. Cong. for Study of Exceptional Children.) *Brit.
Journ. Child. Dis.*, Dec. 1910.**

It is in psychasthenia that obsessions and phobias are so insistent a feature. But either may be produced by a quite different mechanism, viz., that of *suggestion*. They are in that case the direct product of an implanted idea, and have nothing to do with

(1) feeling of inadequacy, (2) unreasoning dread, (3) sentiment of strangeness, the fundamental features of psychasthenia.

The morbid emotions which accompany these induced obsessions are *secondary* then to the hysterical idea; and they must be cured by removal of the idea which causes them. The cases quoted clearly show this—*e.g.* A woman dared not enter a car alone for fear of fainting. It was not until one found the idea at the root of her fear that the latter could be removed.

Direct treatment of the physical or emotional results of a morbid idea, as by electricity, is bad practice: *psychotherapy* is the indication. The method of cure is illustrated by one of the author's cases of traumatic neurosis.

The labile suggestibility of children is very easy to manage when the physician or pedagogue understands the psychology of childhood. Only in studying this will he be able to obviate reactions so injurious to mental health as false shame, imitative grimaces, undue impressionability of character. Finally the mechanism of the implicit suggestions which lead to *night terrors* is considered, and an illustration of their prevention is related.

The exclusive acceptance of unpleasant sexual affects in infancy as the cause of psychoneuroses is protested against; and further data are asked from pediatricists and educators of abnormal children to estimate their causal frequency, the author's experience being that affectogenetic ideas of quite other sources appear to be efficacious in inducing fears and possessions of childhood.

AUTHOR'S ABSTRACT

SIMULATED FOOLISHNESS IN HYSTERIA. ERNEST JONES,
(40) *Amer. Journ. of Insanity*, Oct. 1910, p. 279.

AFTER making some general remarks on the question of simulation, the author describes a case of ecmnesic moria, with markedly foolish behaviour, in a boy of 15. The state followed on a slight blow on the head, and had lasted some three months. The symptoms were traced to incestuous curiosity in early childhood, and complete recovery ensued. Remarks are added on the general significance of childish foolishness (*Dummstellen*).

AUTHOR'S ABSTRACT.

A CASE OF PSYCHASTHENIA IN A CHILD OF TWO YEARS,
(41) **DUE TO COFFEE DRINKING.** TOM A. WILLIAMS, *Archives and Pædiatrics (N.Y.)*, Oct. 1910.

THE term psychasthenic is used, following Janet, in the sense of an autonomous condition characterised by mental uneasiness,

shown by acts, words or appearances indicating disquiet, and due to feelings of incompleteness in an individual whose intelligence and emotions are otherwise intact.

The patient was a girl of 2 years. Since the age of three months she had received strong coffee, and at the time of observation was taking three cups a day. She refused egg, fish, meat, vegetables and fruit, but has a habit of eating plaster and earth. Two months before she came under my notice she began to persistently scratch her wrist, with a resulting deep sore. For several weeks she screamed throughout the day, and at night was very restless. The general condition was that of very poor nutrition, but there was no definite physical ailment. The psychasthenia in this case was manifested since the age of six months. The eating of plaster and earth was the consequence of a psychologic state, the feeling of inadequacy, similar to that which one feels when he rates himself as being "below par." In such event he resorts to some distraction until the feeling passes away. In the case of the child being based upon a physical dyscrasia, it was more continuous, and was manifested by scratching her wrist, just as in Janet's case of a young woman who poured boiling water upon the naked foot for relief. The screaming and loss of appetite were also the result of the psychasthenia. The screaming may be compared to that form of tic of speech known as coprolalia. The cause in the child must be sought in the general state of physical inadequacy, which created a sentiment of discomfort which the child sought to neutralise by the first stimulus obtainable.

AUTHOR'S ABSTRACT.

**CASE OF CROSSED HEMIDYSERGIA AND TREMOR WITH
(42) DISSOCIATED OCULAR MOVEMENTS. TOM A. WILLIAMS**
(Washington, D.C.), *Boston Med. Journ.*, Sept. 8, 1910.

A YOUNG negro male, probably syphilitic, after months of prodromal malaise, mental confusion and apathy, developed a coarse intention tremor of the right side of the face and tongue and left arm and leg. Soon afterwards, diplopia and strabismus occurred from feebleness of right external rectus as well as dysergia. In binocular vision the patient could look towards neither outer canthus completely; although each eye singly could do so, the right only with difficulty and wide tremor. This condition disappeared in a few days under treatment.

The intentional oscillations of the right face occur about 8-10 times per second. There is marked dysergia of the left arm, shown by slow, clumsy and inaccurate attempts at buttoning

his clothing, shaking hands, etc.; the diadocokinesis is much impaired; there is a tremor similar to that of the face; it, however, ceases after ten seconds in one position.

There is no motor paralysis or weakness; but he drags the left leg and walks "aux petits pas," and there is rigidity and slowness of movement in the trunk. The reflexes are exaggerated, but there is no extension of the toe nor true spasticity. The speech is slow, thick, and scanning. Mentally he is suspicious, choleric, and enfeebled.

The author, in interpreting the symptoms, discusses the physiology of the cerebello-rubro-spinal apparatus, and believes that the crossed distribution of the dysergia in this case is due to a lesion analogous to that described by Foville where the pyramidal tract is concerned.

AUTHOR'S ABSTRACT.

**THE ARGYLL-ROBERTSON SIGN CANNOT BE A CONSEQUENCE
(43) OF BASAL MENINGITIS.** LAFON, *Press. Med.*, Sept. 17,
1910, p. 697.

WHILE agreeing with Babinski that the Argyll-Robertson sign is pathognomonic of acquired or hereditary syphilis, and that it is nearly always associated with a chronic meningitis usually only revealed by the presence of lymphocytosis of the cerebro-spinal fluid, the author is unable to accept the association of these conditions as one of cause and effect, but believes that both are results of a common cause—syphilis.

Babinski's theory implies a lesion of the intra-meningeal portion of the third nerve. Such a lesion does not, and could not, according to Lafon, produce so restricted a paralysis as that which underlies the Argyll-Robertson sign. The reported appearance of this sign during the recovery of a third nerve paralysis is to be ascribed to faulty observation, for as soon as the accommodation-convergence reaction reappears the reaction to light may be elicited if a strong enough stimulus is used.

The Argyll-Robertson sign may be regarded as the best known member of a series of pupillary affections which precede, accompany, or follow it, and have the same significance and the same pathology. A meningeal lesion of the third nerve trunk could not explain these conditions, as, for instance, the frequently associated loss of the reflex to pain, unless a set of separate lesions were supposed to occur in the nerve always picking out the pupillary fibres only.

The deformity of the pupil and the atrophy of the iris can only be explained by a lesion of the ciliary ganglion in which the fibres of the third nerve terminate, and in third nerve paralysis the miosis so common in the Argyll-Robertson pupil does not occur.

Lastly, the author has pointed out that in a patient with the Argyll-Robertson sign and miosis, complete paralysis of the third nerve abolished the accommodation-convergence reaction without altering the miosis, an observation which excludes the trunk of the third nerve as the seat of the causal lesion.

The author agrees with Marina that the source of the Argyll-Robertson sign is in the ciliary ganglion, and thinks that the same process which causes the meningitis attacks the connective tissue stroma in and around the ganglion secondarily affecting the nerve cells.

H. M. TRAQUAIR.

MINERS' NYSTAGMUS AND FORMIC ACID. OHLEMANN, *Ophth.*
(44) *Rev.*, Nov. 1910, p. 340.

THE author, who has had a large experience of miners' nystagmus in Westphalia, treated twelve cases with formic acid in doses similar to those recommended by Dr Percival. (See abstract of Dr Percival's paper in the *Review of Neurology and Psychiatry*, November 1910, p. 712.)

Three of the cases were of over two years' duration, three of less, and the remainder were of recent onset. All were off work. The treatment was continued for three weeks without any benefit resulting.

The author is entirely sceptical as the value of any drug in this condition, and believes that where improvement has occurred it has been due to abstinence from work.

H. M. TRAQUAIR.

**AN UNUSUAL CASE OF POST-DIPHTHERITIC PARALYSIS OF
(45) ACCOMMODATION.** (Ein aussergewöhnlicher Fall von Akkommodationslähmung nach Diphtheritis.) E. WIEGMANN,
Klin. Monatsbl. f. Augenheilk., 1910, Bd. ix., p. 454.

POST-DIPHTHERITIC paralysis of accommodation is usually a mild affection, lasting on the average from four to eight weeks. Mühsam has hitherto been the only observer who has seen it persist after four years. The present case is that of a boy, aged 12 years, who three years previously had had a severe attack of diphtheria treated with antitoxin. Bilateral paralysis of accommodation followed. This soon passed off in the left eye, but persisted in the right eye, in which mydriasis was also present. When seen a year later, the paralysis of accommodation had entirely disappeared, but mydriasis of the right eye was still present. It had not been known if mydriasis had also been associated with the paralysis of accommodation in the left eye. The combined paralysis of accommodation and of the sphincter

pupillæ suggested a nuclear lesion, possibly hæmorrhagic, since both nuclei are situated close together and are supplied by the same nutrient blood vessel.

J. D. ROLLESTON.

UNILATERAL TRAUMATIC PARALYSIS OF NERVES TRAVERS-

- (46) **ING THE JUGULAR FORAMEN: GLOSSO-PHARYNGEAL, VAGUS AND SPINAL ACCESSORY.** (Einseitige traumatische Lähmung aller durch das Foramen jugulare austretenden Nerven: Glossopharyngeus, Vagus und Accessorius.) WÜST-MANN, *Zeitsch. f. Ohren.*, Bd. 61, S. 43.

THE case was that of a female reaper who was attacked by another labourer with a pitch-fork: the blows on left side of the head, chin and shoulder caused the patient's head to be violently turned to the right, but no mention is made of any punctured wound. There was no loss of consciousness, vomiting or hæmorrhage, but the patient became breathless and suffered from a rattle in the throat. Hoarseness and dysphagia were noted at once, along with limitation of movement in the left arm: fluids at times returned by the nose. The pulse was rapid even during rest, but the motor power of the stomach was apparently normal. The speech was hoarse and of the "rhinolalia aperta" type: secretion of parotid normal on both sides: left side of palate paralysed (motor and sensory). Taste normal on anterior part of tongue, but paralysed on left side posteriorly, especially for bitter and salt substances. All branches of spinal accessory paralysed—trapezius, sternomastoid and palatal. The left vocal cord was in position of respiration and was not hollowed out but tightly stretched: on phonation the right cord crossed the middle line but did not come up to the left: sensation also paralysed in left half of larynx. All other cranial nerves were normal: there were no signs of intra-cranial hæmorrhage or of injury to the hypoglossal nucleus.

J. S. FRASER.

PSYCHIATRY.

SOME RECENT PSYCHOLOGICAL TENDENCIES IN PSYCHIATRY.

- (47) WILLIAM A. WHITE, *N.Y. Med. Journ.*, June 11, 1910.

THE greatest change which has occurred in recent years in the practice of clinical psychiatry is the careful and detailed examination of each case from the earliest period of childhood, and the careful analysis of individual symptoms.

A tribute is paid to the work of Freud, and the importance of the study of dreams is emphasised. The author concludes that it is only by the use of such methods that one can hope to help the patient by the application of a rational therapy.

D. K. HENDERSON.

AUTOPSYCHOLOGY OF THE MANIC-DEPRESSIVE. E. C. REID,
(48) *Journ. of Nerv. and Ment. Dis.*, Oct. 1910, p. 606.

THE main point of the article written under this startling title seems to be that many patients suffering from manic-depressive insanity retain complete insight throughout, and that doctors and nurses should realise how keenly alive the patients are to their surroundings. (The detailed plea for humane treatment of the insane would be more suitable in other places than a neurological journal.)

ERNEST JONES.

THE INTERMITTENT FORMS OF DEMENTIA PRÆCOX. DUN-
(49) TON, *Amer. Journ. of Insanity*, Oct. 1910, p. 257.

UNDER this title the author attempts to define a "middle ground between the maniacal-depressive and dementia-præcox groups" of insanity. He further includes his previously described "cyclic form" as a sub-group of this. Eight cases are briefly narrated.

ERNEST JONES.

METABOLISM IN DEMENTIA PRÆCOX. PIGHINI and STATUTI,
(50) *Amer. Journ. of Insanity*, Oct. 1910, p. 299.

THE excretion of nitrogen and sulphur in the urine and fæces of four cases of dementia præcox was studied in detail, and the results here recorded. No general conclusions are reached.

ERNEST JONES.

**THE SPIRIT OF PROPHYLAXIS IN RELATION TO PSY-
(51) CHIATRY.** H. W. WRIGHT, *N.Y. Med. Journ.*, July 30, 1910.

THE foundations of most physical and mental disorders are laid in childhood and adolescence, and are due in great part to the faulty education of the child. An analysis of various cases of mental disorder has revealed the fact that the patients have never been trained to adapt themselves to the variations of environment consequent upon modern life, or to unfortunate circumstances.

The striking ignorance in regard to sexual hygiene is especially emphasised.

A plea is entered for more thorough co-operation with schools, social institutions, the press, and the ministry.

D. K. HENDERSON.

TREATMENT.

THE FUTURE POSSIBILITIES OF PSYCHO-ANALYTICAL

(52) **THERAPY.** (Die zukünftigen Chancen der psychoanalytischen Therapie.) SIGM. FREUD, *Zentralbl. f. Psychoanalyse*, I. Jahrg., Ht. 1-2.

In this address to the Psycho-Analytical Society of Nuremberg, Freud lays emphasis (1) on the necessity for advancement in knowledge of the science, and for new methods in technique; (2) on the need for a great increase in the powers of medical men, and a more complete submission on the part of the people; (3) on the general effect on civilised thought which the spread of knowledge of the subject will produce. He concludes by indicating that factors causing neurotic symptoms will, in the course of time, produce variations beneficial to the race.

A. L. TAYLOR.

PERSONAL EXPERIENCE WITH FREUD'S PSYCHO-ANALYTIC

(53) **METHOD.** J. J. PUTNAM, *Journ. of Nerv. and Ment. Dis.*, Nov. 1910, p. 657.

THIS paper is one of exceptional value, not only for the broad, persuasive style with which the author deals with the difficulties of the subject, but because in it is related a comparison of the results of treatment of the same cases by means of different methods. Putnam gives a short account of half-a-dozen cases that had been under his care for long periods before he set himself to acquire the psycho-analytic method. The application of this to these cases gave an astounding increase into his insight and understanding of the pathogenic factors at work, and a corresponding benefit to the patients. The paper should be read in the original, and compared with the discussion of it at the American Neurological Association (*Journ. of Nerv. and Ment. Dis.*, Oct. 1910, p. 630), where a number of dogmatic and often ludicrously ignorant judgments were passed on the subject by some neurologists who had not troubled to inform themselves of the elements of it.

ERNEST JONES.

THE PSYCHICAL TREATMENT OF TRIGEMINAL NEUR-
(54) **ALGIA.** (Die psychische Behandlung der Trigeminus-
neuralgie.) ALFRED ADLER, *Zentralbl. f. Psychoanalyse*, I.
Jahrg., Ht. 1-2.

PSYCHICAL accompaniments of this neurosis can be traced back to early childhood. Ideas, often of a sexual nature, with perhaps a physical basis, lead to a morbid feeling of weakness combined with a dread of femininity and a craving for virility: the consequent desire for protection is often gratified by the simulation of pain. The "männliche protest" persists in later life as a morbid ambition and dislike to subjection. Attacks of neuralgia at this period are associated with emotions of disappointment, anger, jealousy, and the like: the attacks may be related to physical conditions, such as sleep, eating, or washing, but these are regarded as being due to definite psychical concepts formed in childhood. One case described is that of a man in which an undescended testicle, along with the neuropathic constitution, are taken as the primary factors in producing, first, the perverted mental condition in childhood, and then the neuralgia in later life. A psychoanalysis showed a definite sequence of mental phenomena dating from the age of five or six: one of the most striking facts was that the attacks of pain abated when the patient went to stay with his mother, but soon became worse. This man, in whom all treatment short of surgery had been without benefit, has now been well for several months, the result of explaining his condition to him, changing his associations, and keeping him away from his mother. Two other cases of satisfactory psychical treatment are mentioned.

The author does not deny that the neurosis may also be caused by anatomo-pathological conditions, but asserts that such cases have a history distinct from that of the other cases. The exciting cause may be a toxine, but any toxine will not produce the attacks except in a predisposed subject.

Much of the paper deals with the psycho-pathology of functional neuroses, largely in relation to sexual questions.

A. L. TAYLOR.

Reviews

GEHIRN UND RÜCKENMARK. LEITFADEN FÜR DAS STUDIUM DER MORPHOLOGIE UND DES FASERVERLAUFS. EMIL VILLIGER. Zweite Auflage. Leipzig: Wilhelm Engelmann, 1910. M. 12.60.

THE early appearance of a second edition of this book, which was first published in 1905, is an indication of its usefulness. The present edition contains a number of additional illustrations, mostly of a diagrammatic nature. A concise account of these is given in the text, and the book forms an excellent introduction to the study of the anatomical and microscopical structure of the various parts of the brain. The diagrammatic illustrations will prove of great use to the clinician who desires to show the various conducting paths.

A third section has been added to this edition, consisting of a series of sections from the genu of the corpus callosum to the lower extremity of the medulla oblongata, and as the names of the various structures are clearly indicated, these will be found to add materially to the usefulness of the work.

DIE GEFÄSSDRÜSEN ALS REGULATORISCHE SCHUTZORGANE DES ZENTRALNERVENSYSTEMS. E. VON CYON. Berlin: Julius Springer, 1910. M. 14.

THIS book consists simply of a collection, in their order of publication, of all Cyon's published works upon the ductless glands. It is divided into four chapters, each devoted to one gland—the thyroid, the pituitary, the pineal, and the suprarenal. For anyone wishing to make use of Cyon's work on these glands, this collection will prove of value.

LA VIE MENTALE DE L'ADOLESCENT ET SES ANOMALIES. AUG. LEMAITRE. Sainte-Blaise: Foyer Solidariste, 1910. 3 Fr.

IN this little book of 240 pages Professor Lemaitre, whose work in this connection is already well known to readers of the *Archives de Psychologie*, gives us a lucid and deeply interesting summary of his investigations into the psychology of the adolescent. Beginning with such harmless mental peculiarities as coloured hearing and figure diagrams, the author passes to the phenomena of hallu-

cination, multiple personality, and mental dissociation. A short but important and suggestive chapter deals with the psychical disturbances which seem to the writer indicative of future tubercular or neurasthenic affections of a serious nature. Most of the illustrative cases are provided by boys of thirteen or fourteen years of age, and much of the value of the record lies in the intimate and personal character of their self-revelations. These in themselves form a contribution of real value to our knowledge of the nature of the mind. From the medical point of view the book falls into line with the recent work of Morton Prince in America on the dissociation of personality and on the function of dreams in neuroses, and with that of Jung in Switzerland on word associations as a method of psycho-analysis. The light which such researches are casting on that obscure borderland of human life where physical and mental meet makes one realise that even in the present imperfect state of the science the fact that psychology has no compulsory place in our medical curriculum is hardly less than a criminal anachronism.

MARGARET DRUMMOND.

THE PSYCHOLOGY OF NEURASTHENIA. (*Psychologie des Neurasthéniques.*) PAUL HARTENBERG. Second Edition. Paris: Félix Alcan. 3 fr. 50.

IN this volume Dr Hartenberg gives us a sympathetic picture of the condition of neurasthenia as it appears to the sufferer. The unbearable ennui, the depression leading to pessimism and misanthropy, are described and illustrated from such well-known writers as Leopardi, Rousseau, Chateaubriand, Guy de Maupassant, etc. Nervous irritability, headache, volitional disturbances, such as indecision and inhibitions of one form or another, and, above all, a lasting fatigue, complete the essential characteristics of simple neurasthenia. These symptoms, according to the writer, all arise immediately out of the lowering of nervous potential, in which the diseased condition consists; they actually *are*, indeed, simply the reflection in consciousness of the physical state. The mental disorders, such as morbid fears, tics, aboulia, hypochondria, etc., which so often accompany neurasthenia, are also described; these Dr Hartenberg designates "psychic complications," because he considers that they do not depend directly on the morbid physical condition, but are the resultant of the action of this condition on the personality; in a word, the neurasthenia simply plays the part of a resonator which exaggerates and amplifies morbid tendencies which already exist.

The author does not here profess to deal with treatment, but his conception of the disease as resulting essentially from a definite

physical condition leads him to range himself with those neurologists who limit their treatment to physical remedies, without concerning themselves about the mental state of their patients.

Here he, of course, finds himself in opposition to those practitioners who place faith in psycho-therapeutics. Dr Hartenberg claims that mental treatment has in the case of neurasthenia been largely discredited; but in view of the increasing demonstration of the power of mind over body which is evidenced by the medico-psychological writings of the present day, it would seem that this verdict is at least premature. We have long been forced to admit that the mind can bring about the simulation of physical disease or even actual lesions, such as blisters; it would seem, then, in accordance with reason and commonsense to suppose that this power might be exercised in a beneficent, no less than in a maleficent direction. Until we know more than we do at present about the nature of the relation which obtains between mind and body, it ill becomes us dogmatically to lay down limits to the reach of mental influence.

The book is nevertheless a valuable contribution to the literature of neurasthenia, and by its luminous and interesting style and careful arrangement should help to promote clearness of thought in an obscure and difficult subject. MARGARET DRUMMOND.

THE MENTAL SYMPTOMS OF BRAIN DISEASE. BERNARD HOLLANDER, M.D. London: Rebman Limited, 1910. Pp. 229.

THE aim of this book is the collection of clinical records of the mental symptoms of localised brain lesions; its value depends, in great measure, on the large number of cases cited.

The author contends strongly for the principle that "the elementary psychical states and capacities are related to definite brain centres," and he believes that the non-recognition of this principle of the localisation of mental functions explains why so little progress has been made in the treatment of brain disease and mental disorder. Too great importance has been attributed to the results of experiments, while clinical and pathological observations in man have been neglected.

A large number of clinical cases are given—cases of cerebral injury, tumour, hæmorrhage, softening, etc.—which, he thinks, warrant these conclusions:—

1. The frontal lobes contain the centres for the higher intellectual operations and for the manifestation of the higher human sentiments. They are also the centres for the perception of objects and all their attributes (shape, size, weight, colour, etc.),

and for the memory of places, words, figures and tones. They are also the centres of inhibition, and exercise a controlling influence on the lower feelings and propensities.

Destructive lesions of the frontal lobes will cause loss of some or all of these functions; stimulation of these lobes, on the other hand (*e.g.* in hyperæmia), gives rise to increased mental activity, and to a feeling of well-being, exaltation, euphoria.

2. Melancholia is related to lesion of the parietal lobes, more especially the angular and supra-marginal convolutions.

3. The base of the temporal lobes is related to states of excitement, from mere irascibility to furious and homicidal mania; also to delusions of suspicion and persecution, often with hallucinations of hearing. Ear disease is a not infrequent cause of the brain lesion.

Chapter XIX., dealing with "The Criminal from Brain Defects and Disease," is of special interest from the medico-legal point of view. Crime is often due to disorder or disease of the brain; the usual signs of insanity may be absent; the individual may have a "knowledge of the difference between right and wrong" (*i.e.* the legal test of insanity may fail), and yet he may be subject to delusions and dangerous impulses—the direct result of the brain lesion.

The Operative Treatment of Insanity.—The author firmly believes that a serious consideration of the possibility of localisation of mental disorders in their early stages would soon lead to a surgical cure of insanity in many more cases than at present. Not a few successful cases are included in those quoted throughout the book—chiefly traumatic lesions affecting bone and meninges, and cases of ear disease. As regards traumatic cases, he says, "In every case of insanity in which there is a history of head injury, and the locality injured corresponds with the locality indicated by the symptoms, as described in this work, operation should positively be undertaken, even if there be no external sign of trauma, such as a scar or depression of bone, and although there is no local tenderness or fixed headache." The length of time that elapsed between the accident and the onset of the symptoms apparently need not be considered.

The author deserves great praise for the industry and care with which he has collected so many important clinical observations. No one can read the work without being impressed with the necessity of making a thorough examination of the state of all the mental functions in any case of brain disease. There may be many points with which readers will not agree, but we believe that the author has brought forward material sufficiently suggestive to make the reader seriously consider the important subject dealt with.

A. W. M.

MORAL INSANITY IN CHILDHOOD AND THE THERAPEUTIC VALUE OF THE EMOTIONS. (Über krankhafte moralische Abartung im Kindesalter und über den Heilwert der Affekte.) G. ANTON. Halle a. S.: Carl Marhold, Verlagsbuchhandlung. 1 M.

IN this pamphlet Professor Anton briefly describes the symptoms indicated by the term "moral insanity"; defends the use of the name as a convenient way of indicating the fact that there are morbid processes which result in an anti-social disposition, while the intellectual ability is practically normal, and considers the relationship of this so-called moral insanity to other categories of mental disease, such as katatonia. A lengthy bibliography is given.

MARGARET DRUMMOND.

IMPORTANT DECISIONS IN LEGAL PSYCHIATRY. (Wichtige Entscheidungen auf dem Gebiete der gerichtlichen Psychiatrie. 9 Folge.) G. Voss. Halle: Carl Marhold, 1910, pp. 46. M. 1.

THIS little annual volume gives, as before, a brief summary of all the more important decisions for the past year (1909) in the German courts, in cases where questions with a psychiatric bearing were raised.

J. H. HARVEY PIRIE.

Obituary

PROFESSOR RAYMOND (1844-1910)

IT is with deep regret that we record the death during the autumn vacation of Professor Raymond, following closely as it does upon the loss of Joffroy and of Brissaud. Raymond was the immediate successor in the Chair of Clinical Neurology in the University of Paris of his master, Charcot, and he was the oldest student of that illustrious school of the Salpêtrière which has since sent out Pierre Marie, Ballet, Babinski, Souques, etc. He had during his career acquired all the honours most highly prized in French medicine—*Membre de l'Académie de Médecine*; *Commandeur de la Légion d'Honneur*—but it was with peculiar pleasure that in June 1908 he received from the University of Oxford the honorary degree of Doctor of Science. The welcome which was given to him in England on this occasion, when he gave a lecture at Guy's

Hospital, and at a reception at the Royal College of London, always remained one of his most cherished memories.

All those who came into contact with Raymond were impressed by his courtesy and accessibility, his generosity of heart and optimism of temperament, his unwearied industry and his great power as a physician.

Amongst the considerable number of papers which he wrote, the medical, and in particular the neurological world will recall the following remarkable publications: his study on "L'hémichorée, l'hémi-anesthésie et les tremblements symptomatiques"; his anatomo-pathological research, "Sur les Noyaux bulbaires et sur les Localisations Cérébrales"; his work upon "Les Atrophies Musculaires"; his articles and general reviews upon various nervous diseases, and in particular upon "Les Tabes Spasmodiques," which he was the first to consider as a clinical syndrome. He was an upholder of Fournier's doctrine of the syphilitic origin of tabes and general paralysis, and at a celebrated discussion at the *Académie de Médecine* he spoke in support of the eminent exponent of this theory.

Since his appointment to the chair of Charcot, Raymond published his studies and lectures in the form of a series of volumes of "Cliniques," which treat of the most diverse subjects and include specially his work with Pierre Janet upon the psychoneuroses. At the time of his death he was occupied in putting the finishing touches to a volume of "Pathologie Nerveuse," which has just been published. It is the fruit of the seven last years of his labours, and in it we find again the clearness, the clinical acumen, and the precise and thorough scholarship, in touch with all the acquirements of modern science, which have made Raymond one of the most illustrious neurologists of our times.

BOOKS AND PAMPHLETS RECEIVED.

Horch und von Franqué. "Die Abtriebung der Leibesfrucht vom Standpunkte der lex ferenda." Halle: Marhold, 1910. M. 1.50.

Bárány. "Die nervösen Störungen des Cochlear- und Vestibular-apparates" (*Handbuch der Neurol.*, Bd. 1).

Bárány. "Neue Untersuchungsmethoden, die Beziehungen zwischen Vestibularapparat, Kleinhirn, Grosshirn und Rückenmark betreffend" (*Wien. med. Wchnschr.*, Nr. 35, 1910).

Rutherford Jeffrey. "On the Cause of Neuropathic States" (*Brit. Med. Journ.*, Nov. 19, 1910).

Tom A. Williams. "A Case of Crossed Hemidysergia and Tremor, with Asynergia of Binocular Movements" (*Boston Med. and Surg. Journ.* Sept. 1910).

Tom A. Williams. "Cases illustrating the Origin of Hysterical and Pseudohysterical Symptoms" (*Amer. Journ. Med. Sc.*, Sept. 1910).

Marinesco. "Recherches sur la Cyto-architectonie de l'écorce cérébrale" (*Rev. gén. des Sci.*, Oct. 15 et 30, 1910).

Schlesinger. "Ueber ein bisher unbekanntes Symptom bei Tetanie (Beinphänomen)" (*Wien. klin. Wchnschr.*, Nr. 9, 1910).

Schlesinger. "Eine typische Geschwulstmetastase im Unterkiefer mit Lähmung des Trigeminus (Nervus alveolaris)" (*Wien. klin. Rundschau*, Nr. 47, 1909).

Vernon Briggs. "Restraint instead of Treatment" (*Boston Med. and Surg. Journ.*, No. 11, 1910).

Roubinovitch. "Aliénés et Anormaux." Paris: F. Alcan, 1910. 6 fr.

"Arbeiten aus dem Neurol. Institut. an der Wiener Universität," Bd. 18, H. 3, 1910.

Petrén. "Ueber die Bahnen der Sensibilität im Rückenmarke, besonders nach den Fällen von Stichverletzung studiert" (*Arch. f. Psychiat.*, Bd. 47, H. 2).

Petrén. "Quelques observations sur le Traitement de la Sciatique" (*Rev. de Méd.*, Sept. 10, 1910).

"Archives de Doyen," Vol. i., No. 1. Paris: A. Maloine, 1910.

Ariëns Kappers. "The Migrations of the Motor Cells of the Bulbar Trigeminus, Abducens, and Facialis in the Series of Vertebrates, and the Differences in the Course of their Foot-Fibres." Amsterdam: Müller, 1910.

Martin Römstrom. "Emanuel Swedenborg's Investigations in Natural Science, and the Basis for his Statements concerning the Functions of the Brain." Till Kungl. Vetenskaps Societeten i Uppsala, 1910.

Parkes Weber. "A Case of Osteopathy and Perforating Ulcer of the Foot in Syringomyelia" (*Trans. Med. Soc. of London*, Vol. 33).

Parkes Weber and Dorner. "Chronic Muscular Atrophy, chiefly affecting the Thigh Muscles" (*Trans. Med. Soc. of London*, Vol. 33).

Elders. "Die motorischen Centren und die Form des Vorderhorns in den fünf letzten Segmenten des Cervikalmarkes und dem ersten Dorsalsegmente eines Mannes, der ohne linken Vorderarm geboren ist" (*Monatsschr. f. Psychiat. u. Neurol.*, 1910).

Review of Neurology and Psychiatry

Original Articles

NOTE ON THE "CROSSED" PLANTAR REFLEX.

By BYROM BRAMWELL, M.D., P.R.C.P.E., F.R.S.E.,

Senior Ordinary Physician to the Edinburgh Royal Infirmary ; Lecturer in
Medicine and Clinical Medicine in the School of the Royal Colleges
Edinburgh.

IN the year 1903 I published in this Journal (vol. i., p. 795) a case of hemiplegia, in which a peculiar condition of the plantar reflex was present—irritation of the paralysed sole produced extension of the big toe (the Babinski sign) on the paralysed side, while irritation of the non-paralysed sole produced plantar flexion of the big toe not only on the sound (non-paralysed), *but also on the paralysed side*. In that paper I stated that I had observed the same form of "crossed" plantar reflex in at least four other cases. Since I originally directed attention to the subject I have noted the same condition in several additional cases, and published some of them (see *Clinical Studies*, vol. v., p. 249, and vol. vi., p. 230).

In my original paper I suggested an explanation (with diagram) of the phenomenon, viz., that in consequence of the lesion of the crossed pyramidal tract the plantar reflex on the paralysed side was "set to extension," and that irritation of the sole of the non-paralysed side produces flexion of the big toe on the paralysed side as a result of the reflex impulse passing through the anterior horn of the spinal cord on the non-paralysed

side, and through the anterior commissures of the cord, to the muscles of the foot on the paralysed side.

In the year 1907 Dr Philip Coombs Knapp published in this Journal (vol. v., p. 825) a Note on "The Mechanism of the Plantar Reflex, with special reference to the Phenomenon of Crossed Reflex." In that paper he recorded some cases, giving a different explanation (with diagram) from the explanation which I had suggested, and noted that his paper was presented in substance at the meeting of the American Neurological Association in 1902, *i.e.* before the publication of my paper.

Since the year 1903 a number of other observers (Babinski, Ganault, Steinberg, and Klippel and Weil) have described cases of the same sort (see Abstracts in this Journal, vol. vii., pp. 126 and 127). Klippel and Weil state that they have seen the same form of crossed plantar reflex in cases of advanced tuberculosis in which the nervous system was unaffected.

In my original paper I stated that if the theory I advanced to account for the phenomenon were correct, one ought to meet with cases of hemiplegia in which irritation of the paralysed sole produces *extension* of the big toe on the *non-paralysed* side, but in which the non-paralysed side remains "set to (the normal) flexion," *i.e.* in cases in which irritation of the non-paralysed sole produces plantar *flexion* of the big toe of the same (non-paralysed) side. I have not met with any case of this kind.

I have at present under my observation in the Edinburgh Royal Infirmary a case which seems to disprove the theory which I advanced; it is, in fact, the very reverse of the case I have just supposed.

The case is one of left-sided hemiplegia in a man aged 39. The patient was admitted to the Edinburgh Royal Infirmary on 18th January 1911, complaining of weakness in the left arm and left leg.

The hemiplegia was of fourteen months' duration, and was sudden in onset. One night he went to bed feeling quite well; the next morning when he awoke he found that he had completely lost the power of the left arm and left leg, the face being, he says, unaffected. He had previously enjoyed good health; he had not had syphilis, and was not the subject, so far as he knew, either of cardiac or kidney disease. There had been no previous

headache or other symptoms suggestive of any "coarse" intra-cranial lesion.

He slowly recovered from this attack, the arm regaining power more quickly than the leg.

In September 1910 he gradually lost power in the affected arm and leg. In November he suffered from pain on the right side of his head, and had some twitchings in the left hand and in the left leg. About the same time he vomited twice, and lost control over the bladder; for a time the water had to be drawn off twice daily with the catheter.

On admission to the Infirmary on 18th January 1911, there was some weakness in the left arm and more marked weakness in the left leg. There was no paralysis of the face. There was no apparent loss of sensation (either to touch, pain, heat or cold) in the paralysed limbs.

There was no evidence of any "coarse" intra-cranial lesion (no headache, vomiting, optic neuritis, etc.). The heart appeared to be quite healthy; the urine was normal; the blood-pressure was low (115 millimetres of mercury).

The deep reflexes on the affected (left) side, both arm and leg, were markedly exaggerated; the deep reflexes on the right (non-paralysed) side were also exaggerated. There was no ankle clonus. A double extensor response (the Babinski sign) was present.

The case was, in short, one of left-sided hemiplegia, the leg being more markedly affected than the arm, in which the deep reflexes on the non-paralysed side were exaggerated, as not infrequently is the case, presumably in consequence of degeneration of the pyramidal tract on the non-paralysed as well as on the paralysed side of the body. The original cause of the hemiplegia (notwithstanding the apparent absence of any cardiac lesion) was thought to be embolism of the middle cerebral artery.

As I have already said, irritation of the paralysed side produced extension of the big toe (the Babinski sign) on the paralysed (left) side; and irritation of the non-paralysed (right) sole also produced extension of the big toe (the Babinski sign) on the non-paralysed (right) side.

A double "crossed" plantar reflex was present and was of the flexor type. Irritation of the left (paralysed) sole produced

flexion of the big toe on the right (non-paralysed) side; and irritation of the right (non-paralysed) sole produced flexion of the big toe on the left (paralysed) side.

This condition of the plantar reflex is an extremely interesting one, and, to my mind, very difficult to explain, more especially since I have seen and recorded another case in which, as the result of an injury to the back, the Babinski sign was present on both sides, and in which irritation of either sole produced a double extensor response (the Babinski sign) on both sides of the body. I have recorded that case in my *Clinical Studies*, vol: iv., p. 92. The leading particulars were as follows:—

The patient was a young man, aged 22. He enjoyed splendid health until thirteen and a half months before he came under my observation. He then fell backwards from a ladder, a distance of 16 feet. He thought that he came down on his heels, but he also struck his head. The injury was immediately followed by severe pain in the small of the back, paralysis of both legs, complete loss of sensation in both legs, and complete paralysis of the bladder and rectum. There was a small bruise over the lumbar region, but the bone, he says, was not injured; the spinal column when he came under my observation did not present any evidence of former injury. (This was an interesting point, for in the great majority of cases of this kind in which an injury to the back is followed by immediate paralysis and persisting paraplegia, the bone is injured; there is usually a fracture or fracture-dislocation of the vertebræ with resulting crushing of the spinal cord.) In this case there was evidently a severe organic lesion of the spinal cord produced at the time of the injury; I presume a hæmorrhage and contusion of the spinal cord. The case seems to have been much more than mere concussion. The retention of urine continued for five weeks; during that time the water was drawn off by the catheter. The bowels were obstinately constipated and did not move for nine days after the accident, and then only as the result of medicine and an enema.

Five weeks after the accident the patient was able to move his toes. Sixteen weeks after the accident he was able to stand and walk a few steps with support. (He does not know when the sensation returned.) Since then he has slowly and gradually improved.

When he came under my observation he was able to walk with the help of two sticks, but he still walked with great difficulty. The legs were dragged and were stiff. The gait was typically spastic in character. The loss of sensation (anæsthesia, analgesia, etc.) had practically disappeared.

The condition of the reflexes was very interesting. The knee jerks were very markedly diminished, especially on the left side; the muscles on the fronts of the thighs were soft and atrophied, more especially on the left side, and presented the reaction of degeneration in a partial form. The lesion had evidently affected the grey matter or anterior roots of the lumbar segments, upon the integrity of which the knee jerk and the nutrition of the muscles on the front of the thigh depend.

The muscles below the knee were firm and well-nourished. The Achilles jerks were extremely active; ankle clonus was present on both sides.

The Babinski sign was extremely well-marked on both sides; and irritation of either sole produced *extension* of the great toe (the Babinski sign) on *both* sides. There was, in short, a bilateral "crossed" extensor response.

My observations on the "crossed" plantar reflex therefore show:—

(1) That in a considerable number of cases of hemiplegia in which there is an extensor response on the paralysed side, a flexor response on the paralysed side can be elicited by irritation of the opposite (non-paralysed) sole.

(2) That in some (rare) cases of hemiplegia in which a double extensor response is present, a double flexor response can be elicited on irritating either sole.

(3) That in some (rare) cases in which a double extensor response is present (as the result of an injury to the upper part of the lumbar enlargement of the spinal cord), a double extensor response can be elicited on irritating either sole.

It seems to me to be extremely difficult to advance any theory which will satisfactorily account for these phenomena.

A NEW METHOD FOR THE ESTIMATION OF CRANIAL CAPACITY AT AUTOPSY.

By A. J. ROSANOFF, M.D.

AND

JOHN I. WISEMAN, M.D.,

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It has been shown by the researches of Bartels (1), Pfleger (2), Bolton (3), Mittenzweig (4), Southard (5), Watson (6), and many others, that the average weight of brains of insane subjects is below the normal average; and it has also been shown that when cases of idiocy and imbecility, epilepsy, general paresis, and coarse cerebral lesions are excluded from consideration, the average is still found to be below the normal.

The questions that at once suggest themselves are, How often and in what clinical types of cases is this reduction in weight due to a process of atrophy? How often does it constitute original defect?

In this paper we propose to discuss: (1) the methods that are generally employed for the detection of atrophy, (2) existing methods for estimation of cranial capacity, and (3) a new method proposed by us.

§ 1. *Methods Generally Employed for the Detection of Atrophy.*

Within the past four years one of us has had occasion to examine a very large number of post-mortem records in five large hospitals for the insane in this State and in five large general hospitals in New York and in Boston. The only points that were found to be recorded as having a bearing upon the question of brain atrophy were: brain weight; certain gross appearances, such as shrinkage of gyri, widening of sulci, and excess of cerebro-spinal fluid; and certain microscopical appearances. A review of the literature pertaining to this subject has also shown that with some few exceptions—notably that of the recent work of Reichardt (7)—no attempt has been made to apply more accurate methods even in special investigations.

The fact that brain weight varies normally within wide limits renders the record of such weight alone in a given case of but little value. For it is obvious that a brain may be found at autopsy to be as high as the normal average in weight, or even higher, and yet may be one in which atrophy to the extent of 200 grams has occurred. And it is equally obvious that a brain may weigh 200 grams less than the normal average and yet may be one in which no atrophy has occurred.

Estimation of degree of atrophy from gross appearances, such as shrinkage of gyri and widening of sulci, is at best but roughly approximate, there being no way of taking exact measurements. Indeed, when the atrophy is but slight or moderate, as it is in most cases, its very existence may escape detection if judgment is based on these gross appearances.

Increase of cerebro-spinal fluid as a measure of atrophy also has sources of large error. In the first place it is difficult to drain and collect all the fluid from the subdural and subarachnoid spaces and from the ventricles; in the second place, it is difficult to prevent an admixture of blood and serum from the severed blood vessels; in the third place, there is no way of judging what proportion of the fluid is derived from the cranial cavity and what proportion from the spinal canal; and in the fourth place, encroachments upon the cranial cavity resulting from thickening of the dura, formation of false membranes due to pachymeningitis, etc., would fail to be taken into account.

It would seem safe to say, without going into an extended discussion, that microscopical methods are still less helpful than the methods already discussed in estimating degree of atrophy.

In the meantime, parallel with the anatomical observations showing that the average weight of brains of insane subjects is below the normal average, there are gradually accumulating clinical observations showing, on the one hand, that insanity is most apt to develop in persons of inferior or, at least, vulnerable mental make-up (8), and, on the other hand, that most forms of insanity gradually lead to functional deterioration.

These considerations have directed our interest to the development of a convenient method by means of which atrophy, even when present in but slight degree, could be detected, so that cases of low brain weight resulting from atrophy might be distinguished from those due to original defect.

Assuming that there is some correspondence between cranial capacity and brain weight, and that the ratio representing this correspondence could vary normally only within narrow limits, we sought to develop a practical method for the estimation of cranial capacity, since cranial capacity seems to be the only available criterion of judgment as to the original weight of the brain in any given case.

Our plan is to find by means of a large number of measurements the normal ratio between cranial capacity and brain weight. Any increase of this ratio in a given case would indicate abnormal reduction of the brain mass, which, in the absence of evidences of compression, would be attributable to atrophy.

§ 2. *Existing Methods for the Estimation of Cranial Capacity.*

The methods that have been proposed for the estimation of cranial capacity depend upon the employment as filling material either of metallic shot, glass beads, or peas, or of liquids, principally metallic mercury and water.

As between shot, beads, and peas, beads are preferred, shot being heavy and peas having the disadvantage of swelling from contact with moisture and shrinking again on being dried, therefore giving inconstant results.

Glass beads are quite suitable, and, under certain conditions, capable of furnishing reliable results. Thus in a series of one hundred estimations made in Prof. von Török's laboratory by Kelemen, the maximum error was a trifle over 1.5 per cent. In this series of estimations a bronze model of a skull, the same selected lot of beads, and the same measuring cylinder were used throughout. These conditions, however, are not like those under which at most autopsies estimations of cranial capacity must be made. It would seem that if this method were generally adopted, the extent and frequency of error would inevitably be much greater than in the case of Kelemen working under artificial and strictly uniform conditions. The slightest irregularity in the shape of the beads, a lack of uniformity in their size, failure to use a measuring cylinder of exactly the same shape and size in every estimation, would very materially affect the accuracy of the method.

As regards methods which depend upon the use of liquids as filling material, we fully agree with von Török (10), who considers them all, with possibly one exception, which we shall refer to again, as entirely untrustworthy. Yet quite recently Reichardt has again suggested such a method. He insists upon a very straight saw cut, upon estimating the cranial capacity before sectioning the thorax and abdomen, and upon repeating the estimation in each case at least ten times, disregarding the results obtained in the first three or four estimations, and using only the calculated average of the results of the last six or seven estimations.

Reichardt himself points out some of the sources of error. Thus he states: "Our investigations have taught us that even slight irregularities of the saw cut may cause an error to the extent of minus 300 c.c." He states, also, that leakage into the foramen magnum, the smaller basal foramina, and the large blood vessels may cause large error, to obviate which he recommends pouring water into the base of the skull until the level at these points of leakage remains constant for several minutes. In some cases, he states, it may be necessary to use corks, putty, or non-absorbent cotton for sealing up the points of leakage.

There are still other sources of error which Reichardt does not mention. Failure to insure a perfectly horizontal position of the level of the saw cut in filling either the base or the calvarium would necessarily involve great error, for it must be remembered that the circumference of the skull is so wide that a difference of 1 mm. in depth of the water makes a difference of about 30 c.c. in the reading.

It must be noted, however, that Reichardt does not claim for his method absolute accuracy. He maintains merely that with the exercise of some care the error involved in the use of his method may be reduced to within 50 c.c., and he maintains further that an error of such degree would not affect the practical usefulness of his method. The latter assumption we believe to be untenable, for all available data show that importance attaches precisely to the slighter reductions in the brain weight, so far as the functional insanities are concerned, the coarser reductions being observed mainly in connection with arrests of development and with organic brain lesions.

We have still to consider another method which has been devised by Poll.¹ The essential feature of this method consists in the use of a bag, made of very thin rubber, which is placed in the cranial cavity and through a trephine opening filled with water. The rubber is so extensible that it is supposed that the mere weight of the water is sufficient to cause the bag to bulge so as to fill every irregularity in the cranial cavity. Poll, and later von Luschan, have obtained by the use of this method results with error of less than 1 per cent. By an ingenious experiment von Török has shown that it is very difficult, if at all possible, to make the bag actually fill every irregularity in the cranial cavity. He covered the inside of a dry skull with sticky coloured crayon; then in testing Poll's method he found that the rubber bag failed in many spots to get an impression of the crayon, showing that at those spots it did not come in contact with the skull bones.

Aside from the possible inaccuracy of Poll's method, its inconvenience and the difficulty of obtaining the necessary rubber apparatus—which does not appear to be on the market—would render that method not suitable for common use, and therefore not likely to be generally adopted.

It seemed to us, therefore, that there was still a need for a simple yet sufficiently accurate method for estimating cranial capacity.

§ 3. *Description of the New Method.*

The special feature of our method consists in the use of putty as filling material. The details of technique are as follows:—

No special care needs to be exercised in opening the skull; it is necessary to guard only against extensive cracking or chipping out of large fragments of bone. The angular or so-called undertaker's saw cut is to be preferred to the circular one. The dura is incised and the brain removed in the usual manner. The dura is then carefully stripped from the base of the skull and cut away by a circular incision made as far below the foramen magnum as possible. The foramen magnum is now closed by means of a cork stopper of suitable size pressed down until its upper edge no longer protrudes above the internal surface of the

¹ Described by von Török, *loc. cit.*

occipital bone, but is on the same level with it. The base of the skull is now filled with putty, small lumps being used at first, which are carefully pressed in so as to fill all the irregularities. The calvarium is filled with putty in a similar manner, after which it is replaced, and by pressure part of the excess of putty is squeezed out through the saw cut. The next step is to fit the calvarium over the base of the skull as exactly as possible, and here slight irregularities and angles in the saw cut are very helpful. The final fitting is most readily accomplished by gentle tapping with a wooden or rawhide mallet upon the top of the skull and carefully removing the excess of putty as it appears through the saw cut.

The putty as used for this purpose must be much softer in consistency than as used ordinarily by glaziers. It may be readily softened by being kneaded with some linseed oil, and if too soft it may be made firmer again by the addition of whiting.

The putty is best kept under water; this prevents it from drying, and renders it unnecessary to soften it afresh every time that it has to be used.

It is advisable to keep the hands wet with water to prevent the putty from sticking to them. Generally the moisture which covers the inside of the skull prevents the putty from sticking to the skull bones. Sometimes it does stick slightly in places, but it can always be easily and completely removed.

We use for measurement two glass cylinders of 2000 c.c. and 1000 c.c. capacity respectively. The smaller cylinder is filled with water exactly up to the 1000 c.c. mark. About 200 c.c. is then poured over into the larger cylinder. The putty from the cranial cavity is then put into the large cylinder, preferably in small lumps rolled up and allowed to slide down slowly by inclining the cylinder to prevent splashing of the water. After all the putty has been put into the cylinder and gently pressed down with a stick, more water is poured in from the smaller cylinder until the level is exactly at the 2000 c.c. mark, care being taken that no bubbles of air are caught underneath or between the lumps of putty. The reading is now taken on the smaller cylinder. By deducting from 2000 the number of cubic centimetres which were taken from the smaller cylinder to fill the larger one, the figure representing the cranial capacity in cubic centimetres is obtained.

§ 4. *Results obtained in Twenty Autopsies.*

We present in the appended table the results obtained in a small number of autopsies merely to show that the method is trustworthy, and that it reveals evidence of atrophy in cases in which brain weight alone fails to show it.

Our results have been tabulated so as to show in each case the race, sex, age, height and weight of the subject; the clinical classification; the weight of the brain and that of the dura; the cranial capacity estimated one, two, or three times; and the calculated ratio between cranial capacity and brain weight.

The close correspondence between the results obtained by repeated estimations in the same cases show that the method is trustworthy. In all cases but two variation of the results was within the limits of less than 1 per cent. In the two cases in which the variation was higher (though still within the limit of less than 50 c.c., regarded by Reichardt as permissible) the discrepancy was ascribed to the fact that in opening the skull the calvarium was badly cracked.

The ratio between cranial capacity and brain weight is shown in our table to be very variable in pathological cases. Its full significance will, however, become apparent only when a large number of observations upon normal as well as insane subjects have been made.

REFERENCES.

1. Bartels. *Neurol. Centralbl.*, 1887, p. 261.
2. Pfleger. *Jahrb. f. Psychiatrie*, Vol. 3, p. 107.
3. Bolton. *Journ. of Ment. Sci.*, April 1905, p. 20.
4. Mittenzweig. *Allg. Zeitschr. f. Psychiatrie*, 1905, p. 31.
5. Southard. *Amer. Journ. of Ins.*, April 1910, p. 673, and July 1910, p. 119.
6. Watson. *Journ. of Ment. Sci.*, April 1910, p. 227.
7. Reichardt. "Ueber die Untersuchung des gesunden und kranken Gehirnes mittels der Wage." Jena, 1906.
8. Adolf Meyer. "An Attempt at Analysis of the Neurotic Constitution," *Amer. Journ. of Psychol.*, 1903, p. 90. August Hoch. "A Study of the Mental Make-up in the Functional Psychoses," *Journ. of Nerv. and Ment. Dis.*, April 1909, p. 230.
10. Von Török. "Ueber ein neueres Verfahren bei Schädelcapacitäts-Messungen," etc., *Virchow's Arch. f. path. Anat. und Physiol. und f. klin. Medicin*, 1900, p. 248.

TABLE SHOWING RESULTS OBTAINED IN TWENTY AUTOPSIES.

No.	Name.	Colour.	Sex.	Age.	Height.	Weight.	Diagnosis.	Weight of brain.	Weight of dura.	Cranial capacity.			Cran. cap. — — — Brain wt.
										First estimation.	Second estimation.	Third estimation.	
273	A. P.	White	M.	48	163 cm.	55.79 kgm.	Man.-depr. ins.	1517 gm.	84 gm.	1650 c.c.	1643 c.c.	...	1.0857
275	H. D.	Negro	F.	29	149 cm.	...	"	1317 gm.	43 gm.	1422 c.c.	1460 c.c.	...	1.0941
277	J. H. B.	White	M.	57	171 cm.	52.84 kgm.	"	1440 gm.	49 gm.	1620 c.c.	1605 c.c.	...	1.1201
281	J. G.	"	M.	50	171 cm.	58.97 kgm.	"	1500 gm.	69 gm.	1683 c.c.	1690 c.c.	...	1.1247
283	H. G.	Negro	F.	22	148 cm.	78.93 kgm.	Dementia præcox.	1015 gm.	...	1225 c.c.	...	...	1.2069
274	K. N.	White	F.	68	161 cm.	86.18 kgm.	"	1192 gm.	81 gm.	1340 c.c.	1348 c.c.	1342 c.c.	1.1275
280	L. F.	"	F.	61	155 cm.	...	"	1265 gm.	67 gm.	1440 c.c.	1437 c.c.	...	1.1375
278	T. B.	"	M.	62	172 cm.	63.96 kgm.	"	1439 gm.	67 gm.	1673 c.c.	1667 c.c.	...	1.1605
267	M. L. U.	"	F.	65	146 cm.	40.37 kgm.	Polynuritic psychosis.	1134 gm.	35 gm.	1200 c.c.	...	...	1.0582
272	E. D.	Negro	M.	51	160 cm.	...	Epilepsy.	1141 gm.	55 gm.	1355 c.c.	1360 c.c.	1350 c.c.	1.1876
279	B. M.	White	F.	90	136 cm.	...	Imbecility.	1010 gm.	40 gm.	1360 c.c.	1357 c.c.	...	1.3455
283	J. C.	"	M.	71	170 cm.	72.58 kgm.	Senile dementia.	1368 gm.	65 gm.	1590 c.c.	1583 c.c.	...	1.1579
265	J. M.	"	M.	33	160 cm.	45.36 kgm.	"	1352 gm.	57 gm.	1555 c.c.	...	...	1.1501
266	S. L.	"	F.	39	149 cm.	...	General paresis.	984 gm.	39 gm.	1355 c.c.	...	...	1.3770
268	H. S.	"	M.	59	157 cm.	50.35 kgm.	"	1204 gm.	79 gm.	1515 c.c.	...	...	1.2583
269	B. M.	"	M.	75	161 cm.	65.32 kgm.	"	1352 gm.	77 gm.	1565 c.c.	1577 c.c.	...	1.1619
271	J. R.	"	F.	55	161 cm.	...	"	...	70 gm.	1643 c.c.	1657 c.c.	1645 c.c.	...
284	J. L.	"	M.	56	180 cm.	72.58 kgm.	"	1335 gm.	60 gm.	1545 c.c.	1540 c.c.	...	1.1558
282	E. F.	"	F.	75	140 cm.	...	"	1140 gm.	69 gm.	1397 c.c.	1397 c.c.	...	1.2254
270	J. M.	"	M.	80	155 cm.	79.38 kgm.	Cerebral softening.	1307 gm.	...	1527 c.c.	1485 c.c.	...	1.1530
							Unclassified.						

THE MESENCEPHALIC FIFTH ROOT: FURTHER REMARKS.

By LEONARD J. KIDD, M.D.

THE recent experimental work of O. May and V. Horsley¹ on the mesencephalic fifth root in the cat and monkey, and the pathological examination of one case of Gasserianectomy in man, has brought out some new points of the utmost importance; and I hope to show how by further experimentation, based on my own study of the subject, we are within measurable distance of settling the exact distribution of the centrifugal processes of the root, and also of proving or disproving their motor function.

Of their ten conclusions, I am concerned solely with the first six. I will take these seriatim: First, they show that the root does contain centripetal axones, and they state that this was found also by Bregmann, 1892, by Probst, 1899, and Van Londen, 1907. When I referred in October 1910 to the work of Bregmann, I quoted entirely from J. B. Johnston's paper, 1909.

I am glad to know now that the mesencephalic fifth root contains centripetal axones, because it enables us to understand the existence of multipolar cells in the tectum mesencephali. Since we know of no instance of motor or sympathetic motor nuclei being derived from the dorsal zone of the embryonic brain or cord, it seems clear that these multipolar cells are the end-stations of at any rate many of the centripetal mesencephalic fifth root axones; in short, they are homologous with the multipolar cells of the nuclei of the dorsal columns of the medulla oblongata.

Then May and Horsley write that "practically all" the centrifugal mesencephalic fifth root processes leave the pons by the motor fifth root. I have shown in my "Addendum," December 1910, how the case of Weisenburg points to the sensory root in man as giving exit to these fibres, and that it shows that the motor root may also give exit to some of these fibres. It will be remembered that Weisenburg's case showed evidence of regenerated fibres in both the motor and sensory fifth roots after their com-

¹ *Brain*, Vol. xxxiii., Part 130, October 1910, pp. 175-203, thirteen figures. (This paper did not appear till November 22, 1910, i.e. some ten days after Kidd's "Addendum" (this *Review*, December 1910) was written and posted by him.)

plete division. May and Horsley's paper contains no reference to the question of regeneration of divided centrifugal mesencephalic fifth root processes. This is a pity, for it is of the greatest surgical importance in some cases, as I showed in my Addendum. Its morphological importance also is great, as I have already shown.

The question of the exit of the fibres is a matter of little or no clinical importance, albeit of much comparative interest. That was my reason for making but little comment (October 1910 number of this *Review*, pp. 596-597) on the conflicting findings of many workers on the subject. My private belief then was that it looked as if in man the motor root would be found to give exit to the majority, or even to all the fibres.

I think that May and Horsley's fourth conclusion, that some of the centrifugal fibres of the root may end in the Gasserian ganglion, is at present neither proved nor disproved.

I suggest that the multipolar cells of the locus cœruleus—of whose existence, I confess, I was unaware till their paper appeared—are homologous with the multipolar tectal cells and those of the dorsal column nuclei of the bulb. Let us not forget that the locus cœruleus is developed in the alar lamina. If any of the cells of the tectum or locus be motor, then clearly our modern conceptions of neuro-morphology need drastic revision.

May and Horsley find that there is no evidence that the cells of the locus cœruleus form part of the axonal system of the trigeminal nerve. This is of great interest.

They find a point of the greatest importance, viz., that the centrifugal mesencephalic processes are not continued into either the ophthalmic or the maxillary divisions of the fifth nerve.

In connection with this experimental finding, it is interesting to recall the fact that some ten days before their paper appeared I concluded,¹ from my study of Weisenburg's case, that "on the whole it seems more probable that the lower face is the only peripheral area in man." But in one point I was obviously in error: I suggested² that the lachrymal gland may receive fibres of common sensibility *via* the mesencephalic fifth root. This we may now take to be virtually disproved.

But the greatest interest arising out of May and Horsley's

¹ This *Review*, December 1910, p. 752.

² This *Review*, November 1910, p. 686.

paper centres round their fifth conclusion, that "avulsion of the peripheral branches of V^3 causes chromatolysis of the characteristic cells (of the mesencephalic fifth root), a result suggesting that these axones (I prefer the colourless but accurate term 'processes' to the debateable one of axones—L. J. K.) run in the peripheral branches, though examination by the Marchi method has failed to reveal them." They write (p. 179) that in the cat, in which the motor branches of V^3 were destroyed without injury to the sensory branches, the chromatolysis "of the globular cells" was also present. This observation does not lend support to Johnston's view that the "axones¹ enter the sensory root." But it does strongly suggest that, seeing that the tectal cells of origin of these centrifugal processes are developed in the alar lamina of the embryonic mesencephalon, they are wholly afferent, *i.e.* endoneural afferent ganglionic cells, and are distributed to the muscles innervated by the motor fifth root, and to other deep mandibular afferents, such as the joint, tendon, periosteum of mandible, etc.

There is one other point in this part of their research which is of great significance, unless I am greatly mistaken; they write (p. 179, *d*): "In one (cat) the motor branches were removed, leaving the sensory part (of V^3) intact. Chromatolytic changes were observed in *many*² of the characteristic cells throughout the entire length of the root." There seem to be only two possible meanings of this limitation of changes, *viz.*, either (1) some of the cells are motor, or (2), as I suggested in October 1910, they are the cells of origin of the muscle afferents contained in the third and fourth cranial nerves.

I will now show how, by the application of my study of regeneration in the divided mesencephalic centrifugal processes, the following experimental procedure can hardly fail to tell us once for all the exact peripheral distribution of these fibres, and, further, to show whether they are deep afferent in function or efferent.

Perform complete Gasserianectomy: six months, or more, later, when regeneration of the severed centrifugal mesencephalic processes might be expected to be complete, perform intra-cranial section of the mesencephalic fifth root: at a suitable subsequent

¹ Inverted commas are mine. (Johnston does not call them axones.)

² Italics mine.

date examine microscopically all the branches of the motor fifth and all the muscles to which it contributes—or could contribute—nerve fibres (I would even include the tensor tympani and tensor palati, though the result would, as I have previously suggested,¹ be probably negative). In addition, all the deep mandibular afferent branches and the cutaneous branches going to the cutaneous area of V³ should be examined. The examination of the muscles would, of course, be directed to both the sensorial endings and the motor end-plates. If by such a method it be proved that the mesencephalic fifth root has any motor function, then indeed will a morphological revolution have begun.

Exactly the same experimental procedure naturally applies to the question of the attempt to determine the exact peripheral distribution of the centrifugal fibres that rise in the dorsal vagoglosso-pharyngeal “nucleus” (*i.e.* ganglion). I pointed out that it is desirable to know whether its fibres regenerate subsequently to section of the ninth and tenth cranial roots centrad of their exo-neural ganglia, *i.e.* if this operation can be performed. Evidently, if I be right in holding that this so-called nucleus is as much a ganglion as are the globular cells of the tectum mesencephali, analogy would suggest that avulsion or section of its peripheral centrifugal fibres would give chromatolytic changes in some of its cells, but that the above-mentioned section would not lead to degeneration further down than the exo-neural ganglia of the ninth or tenth nerves. Any experimenter who may hereafter succeed by the above-mentioned operative procedure in proving the peripheral distribution of the centrifugal mesencephalic processes will have done something more, *viz.*, he will have established a new principle in neuro-physiology, which may be thus provisionally stated: When the peripheral fibre of any nerve-cell passes through, or close to, a collection of nerve cells, in this case the Gasserian ganglion—(1) its section centrad of that collection of cells is not followed by its degeneration peripherad of that collection of cells so long as those cells are intact, but (2) is so followed when that collection of cells has been extirpated from six to twelve months previously.

On the question of deep mandibular afferents one would like to see some retrograde chromatolysis experiments performed, in order to determine whether any of them rise in cells of the

¹ This *Review*, November 1910, p. 683.

Gasserian ganglion, a point not tested, so far as I know, by any experimentalist hitherto.

If the findings of May and Horsley should be confirmed, viz., that the cells of the locus cœruleus form no part of the "axonal system" of the trigeminus nerve, one is more than ever tempted to think that some of its afferent-type cells may, as I hinted lately, enter the facial nerve; some are doubtless the cells of the muscle afferents of the sixth nerve, as I suggested in October 1910. This interesting question I may possibly attempt to study in a future paper.

Though May and Horsley do not definitely state that they accept the motor function of the mesencephalic fifth root, yet they seem to lean towards it, for they write these words (p. 176): "Whether it has any afferent function in addition to the efferent or motor one just described."

I think that the function of the collaterals given by the centrifugal mesencephalic processes to the cells of the motor fifth nucleus is that of forming a reflex mechanism by which all the deep mandibular afferents, of muscle, joint, etc., keep the masticatory and jaw-opening muscles up to their work. The reason why damage to one mesencephalic root gives no appreciable disability is because all jaw movements, even those of protrusion of jaw to one side, are bilateral; we must remember that the mandible is a single bone with two joints. The physiological experiments narrated by May and Horsley were negative; and it is to be noted that they make no mention of having tested the deep mandibular afferent reactions in their operated animals, in short, those that could have been or might have been affected to some degree.

In conclusion, I should like to say I feel personally grateful to them for the many helpful points their paper has brought out, and am sorry they so narrowly missed the victory of this subject. I cannot help feeling that, thanks to the brilliant suggestion of Johnston (which at once gave me the clue to the belief that regeneration should occur in the divided mesencephalic fifth root) and the memorable case of the Editor of this *Review*, with the additional help contained in the fifth conclusion of May and Horsley's Paper, to which I have here alluded, I have here been able to show how the final stage of the battle can be fought out to its finish.

Abstracts

ANATOMY.

ON THE COURSE OF THE NERVE FIBRES IN THE CHIASMA, (55) SHOWN BY EXAMINATION OF THE FIELD OF VISION.

H. RÖNNE, *Klin. Monatsbl. f. Augenheilk.*, Oktober 1910, p. 455.

IN the retina those nerve fibres which pass inwards from the optic disc are arranged radially, while those which pass from the temporal side of the disc form two quadrants arching above and below the fovea, outside which their ends meet in a horizontal raphé.

Injury to a bundle of fibres in the optic nerve where this arrangement exists produces in the field of vision either a sector-shaped scotoma or an arched scotoma which terminates inwards by a horizontal margin representing the position of the raphé.

In the optic radiations the fibres are arranged quite differently, those from corresponding points on the two retinæ lying together so that a lesion at this level produces symmetrical defects in the two fields.

It follows that, apart from the decussation at the chiasma, somewhere in their course the fibres must undergo a rearrangement of their relative positions.

The author's problem is to locate the level at which this alteration takes place. Two cases of chiasma lesion with bitemporal hemianopia are described and illustrated by charts of the fields, which showed, *inter alia*, arched scotomata passing from the blind spot and terminating at the *middle line* by *vertical* margins.

The inference is that at the point of lesion the crossed and uncrossed fibres of the optic nerve had become segregated, but the relation of the fibres to each other in the two portions was still unaltered.

The rearrangement of the fibres is therefore central to the chiasma.

This paper is most interesting and suggestive.

H. M. TRAQUAIR.

THE MOTOR CENTRES AND THE SHAPE OF THE ANTERIOR (56) HORN IN THE CERVICAL ENLARGEMENT OF THE SPINAL CORD OF A MAN BORN WITHOUT THE LEFT FOREARM. (Die motorischen Centren und die Form u.s.w.)

C. ELDERS, *Monatschft. f. Psych. u. Neurol.*, 1910, S. 491.

A MAN of 54, born without any forearm on the left side. The left side of the chest was atrophic, and the left upper arm shorter

and thinner than the right. The functions of the left upper arm were intact, and the man had gained a livelihood by playing an harmonica, the left upper arm being strapped on to the instrument. Microscopically it was noted that both anterior and posterior roots of C6-D1 had a shorter line of origin, fewer bundles, and the individual bundles thinner on the left side. (Those of C5 were injured.) The microscopic appearances of the individual segments were as follows:—

- C4. In the lower half on the left side the most lateral part of the postero-lateral group of cells is wanting.
- C5. The posterior part of the antero-lateral border faces more laterally on the left than on the right, and the lateral part of the postero-lateral group is somewhat lacking.
- C6. On the left the posterior portion of the anterior horn gradually diminishes in size, and with it the postero-lateral group of cells.
- C7. The antero-lateral cell group on both sides moves gradually forward and nearer the middle line. The right postero-lateral angle with its group moves gradually laterally and forward, and grows in size. On the left the whole voluminous postero-lateral angle and its cell group are lacking. The difference between the two sides grows from above downwards.
- C8. On the left the anterior horn gradually loses its anterior part and is reduced to a minimum. On the right the postero-lateral part grows with its cell groups into a large lateral mass, while the anterior cell groups, as on the left side, gradually disappear. Towards the lower end the lateral mass, however, begins to diminish.
- D1. The difference between the two sides disappears gradually in this segment.

The left posterior horn and left postero-lateral columns were noticeably smaller in C5-C8.

On the right side the shape of the anterior horn closely corresponded with that figured in Bruce's "Atlas of the Spinal Cord," but in upper C8 the lateral portion was more voluminous, which the author thinks can be explained by the man's great use of the fingers of the right hand in playing his instrument. The formation of that part of the left horn which is present is similar to the analogous portions on the right side. He considers that the shape of the anterior horn is closely bound up with the differentiation of the cell groups and also with their function, and that the arrangement in this particular case strongly supports the hypothetical scheme of Sano and the ideas of Sano, Parhon, Marinesco and Goldstein as to the motor localisation in the human cord.

J. H. HARVEY PIRIE.

PATHOLOGY.

GLIA-STUDIES. REACTIVE GLIOMA AND REACTIVE GLIOSIS.

- (57) **A CRITICAL CONTRIBUTION TO THE SUBJECT OF GLIO-SARCOMA** (Gliastudien. Das reaktive Gliom und die reaktive Gliose. Ein kritischer Beitrag zur Lehre vom "Gliosarkom.") With 3 figures in the text and 6 plates. MERZBACHER (of Tübingen) and UYEDA (of Nara, Japan), *Ztsch. f. d. ges. Neurol. u. Psych.*, Bd. 1, Ht. 3.

A HISTOPATHOLOGICAL study of the neuroglia changes in a brain in which a sarcoma, arising from the pia, was surrounded by a second tumour of gliomatous nature; several foci of softening were also present; and the neuroglia changes in their neighbourhood were investigated. The mutual relations of the two tumours indicated that the glioma was a reactive phenomenon due to the presence of the sarcoma; where the pressure from the sarcoma on the brain substance was the most intense, there the glioma was largest. Round the foci of softening, due to a trauma several years before death, there was a well-marked gliomatous new formation. The authors criticise the term gliosarcoma as commonly used, and emphasise the view that their case is not one of a mixed tumour, but two separate tumours, each retaining its specific character. The gliomatous reaction in the neighbourhood of the old foci of softening gave the clue to the reactive origin of the gliomatous tumour.

C. MACFIE CAMPBELL.

PSEUDO-PLASMA CELLS IN SOME LEUCOCYTOSES AND

- (58) **EXPERIMENTAL ENCEPHALITIS, WITH OBSERVATIONS ON THE MORPHOLOGY OF PLASMA CELLS.** (Le pseudoplasmacellule in alcune leucocitosi ed encefaliti sperimentali, con osservazioni sulla morfologia delle plasma-cellule.) PAPADIA, *Riv. di Patolog. nerv. e ment.*, F. 11, 1910.

THE author induced encephalitis in rabbits and dogs by injecting tuberculin, diphtheria toxin, tetanus toxin, formol, ammonia, and the tubercle bacillus in glycerinated agar into the brain.

Under perfectly aseptic conditions polymorphonuclear leucocytes appear in the early phases of inflammation, then are absent. Mononucleated elements then make their appearance around the vessels for the most part, though some are seen inside. These cells have an intensely basophile protoplasmic body, and between the fourth and sixth day increase in numbers. Between the eighteenth and twenty-fourth hours they are small, and resemble large mononuclears, but later they become much

larger. Their shape varies considerably, and the nucleus is for the most part excentric. The protoplasm presents an alveolar structure, is intensely coloured except in the vicinity of the nucleus. They undergo regressive changes very early, even in the first days of their appearance, and show many vacuoles. They are most numerous on the sixth day. True plasma cells appear later, at the twelfth or fourteenth day.

From the fact that these mononucleated basophile cells or pseudo-plasma cells come in great part from the vessels, and are met with outside them, the author considers them endowed with migratory power. They are quite distinct from true plasma cells on account of their morphological characters, their source, their mode of multiplication, and their significance. They are mononucleated leucocytes, which, under special conditions, exhibit a basophile protoplasm. Their especially distinctive character lies in the nucleus, which is not only larger than that of a true plasma cell, but varies in size and form from one element to another. The nuclear chromatin is scantier than in the typical plasma cell. Further, the nucleus of the pseudo-plasma cell is coloured blue-violet with the Pappenheim-Unna stain, while that of the plasma cell is green; and the presence of two, three, or four nucleoli is characteristic. Pseudo-plasma cells multiply by karyokinesis, and never give rise to plasma cells. Probably the former are associated with acute inflammatory processes, while the latter are characteristic of subacute and chronic diseases.

DAVID ORR.

HISTOLOGICAL AND BACTERIOLOGICAL INVESTIGATIONS OF
 (59) **A CASE OF PARALYSIS ASCENDENS ACUTISSIMA.**
(LANDRY'S PARALYSIS). (*Histologische und bakteriologische Untersuchungen über einen Fall von Paralysis ascendens acutissima (Landry'sche Paralyse).*) BEVACQUA,
Centralbl. f. Bakt., Abt. I., Orig., Bd. 56, S. 470.

IN this paper the author reviews in some detail the literature of the disease from its histological and bacteriological standpoints, and gives the results of his very complete investigations. A short clinical history and full post-mortem findings are given.

According to the anatomical findings, cases of Landry's paralysis may be divided into four groups:—

1. Cases showing no anatomical lesion either of the central or peripheral nervous systems. Probably there are no such cases, those which have been placed in this class not having been thoroughly investigated.

2. Cases showing marked changes in the cord, and often in its prolongations.

3. Cases showing changes in the peripheral nerves, both cerebral and spinal.

4. Cases showing changes in the cord and in the peripheral nerves.

The lesions are not characteristic, and the process may be a poliomyelitis acuta anterior, a poliomyelitis together with a poliencephalitis, or a diffuse myelitis. Again, lesions of the vessels, an acute bulbo-spinal leptomeningitis, lesions of the peripheral nerves, lesions in the nerve-bundles of the cord, or exudations in the motor area may be found.

According to the causal factor, two groups occur :—

1. Cases due to parasitic (bacterial) agents.

2. Cases due to bacterial toxins.

In the author's case the gross anatomical lesions found at the sectio indicated a severe toxæmia. Histologically the case was one of widespread and severe meningomyelitis, with changes in the peripheral nerves. At the sectio, aerobic cultures were made from various parts of the spinal cord and from the blood sinuses within the skull. From these were obtained bacillus coli communis, a sarcina, staphylococcus aureus, and a streptococcus; but the author evidently believes these micro-organisms were a contamination. Sections of the kidneys, liver, spleen, spinal cord, pons, and medulla showed a bacillus which the author suggests (on quite insufficient grounds, we think) may be bacillus oedematis maligni. The bacilli lay, for the most part, along the vessels.

The case belongs to both classes, as differentiated by the causal factor, some of the lesions being due directly to the bacillus, others to its toxin.

F. ESMOND REYNOLDS.

THE MUSCLES IN CEREBRAL AND SPINAL MUSCULAR

(60) **ATROPHY.** (*Der Muskelbefund bei cerebraler und spinaler Muskelatrophie.*) LEWY, *Berl. klin. Wchnschr.*, No. 45, 1910, S. 2086.

AUTHOR experimented with apes (*Macacus*). The left motor region was in great part removed. The animal developed typical spastic paralysis with contracture in the arm, less marked in the leg. The arm was scarcely used at all, but in spite of that fact there was only a relative emaciation of the limb to be noticed, the other arm increasing in size. After half a year the paralysis practically disappeared. Portions of the muscle were removed from time to time and examined by various methods. In every instance the transverse striation was well preserved, and there was no evidence of degenerative processes.

It is generally assumed in text-books that degenerative changes occur in muscles after interference with the peripheral nerves. Yet

the author has been able to find only one instance where such an observation has been made by the writer himself.

As is well known, the appearance of muscle fibres differs greatly according to the condition in which they are examined—whether in the living condition or after death. In the former case swellings can often be seen in the muscle fibres, and in these swellings transverse striation is absent. The medium in which the structure is examined is also important. The author usually examines in a medium of the serum of the animal and in polarised light in order to test for the presence of transverse striation.

Authorities differ greatly as regards the appearances seen in muscle deprived of nervous influence, whether by destruction of brain substance or section of nerves. The most recent experimental work by Jamin goes to show that so long as any remains of muscle substance exists transverse striation is to be seen.

The author comes to the conclusion that true degeneration of muscle with loss of transverse striation is only to be observed in cases of general damage to the cells of the body, as in bacterial and other poisonings.

Muscle atrophy, as a result of damage to the nervous system, whether central or peripheral, whether accompanied by the reaction of degeneration or not, is always purely quantitative, *i.e.* there is a diminution in the number of fibres, but there is preservation of transverse striation. Muscle preparations form therefore no ground for clinical diagnosis, and the excision of muscle fibres during life for purposes of diagnosis is not worth the trouble.

JAMES MILLER.

**THE COMPARATIVE NEUROPATHOLOGY OF TRYPANOSOME
(61) AND SPIROCHÆTE INFECTIONS, WITH A RESUMÉ
OF OUR KNOWLEDGE OF HUMAN TRYPANOSOMIASIS.**

F. W. MOTT, *Proc. Royal Soc. of Med.*, Nov. 1910.

AT the outset many reasons are given why the spirochætes should be regarded as protozoal rather than bacterial, including laboratory observations on the appearances of the spirochætes both in active and resting forms; the lesions and clinical symptoms resulting from trypanosome and syphilitic infections are shown to be closely related, attention, however, being drawn to the fact that while in practically all cases of trypanosomiasis the nervous system is involved, this does not occur in more than five to ten per cent. of cases of syphilis.

In a resumé of our knowledge of the methods of trypanosome infection, much matter which has frequently been published is reproduced; the latest views of Kleine and Bruce regarding the period during which the glossima may remain infective, and the

part played by mosquitoes and other insects in the propagation of the disease, together with the possibility of infection by coitus are considered.

In this connection it is interesting to note, as showing how rapid is the advance in the investigation of tropical affections, that no mention is made of the *trypanosoma cruzi*, which does not specially affect the nervous system and is propagated by a species of bed bug, while it is evident the article was written before the communication of Stephens and Fantham¹ on the *trypanosoma rhodesiense* appeared; both these parasites present morphological characters by which they are easily distinguishable from *T. gambiense*; moreover, it is almost certain that *T. rhodesiense* is conveyed to human beings, not by *Glossina palpalis*, but by *G. morsitans*.

It therefore appears to be established that there are now three species of trypanosomes which are known to cause disease in man; but it must be noted that in the article under review only the effects produced by the *T. gambiense* are considered.

After a description of the clinical symptoms of sleeping sickness, Mott enters his own sphere, and gives a masterly description of the morbid changes produced in the lymphatic and nervous systems by the *T. gambiense*. These changes are described and illustrated in great detail, and it is shown that meningeal and perivascular infiltration by lymphocytes and plasma cells is pathognomonic, not only of general paralysis, but also of sleeping sickness.

A specially interesting description is also given of the changes to be found in the nerve cells and fibres, not only in cases of human infection, but also in cases of animals artificially infected with trypanosomiasis.

The article is so full of interesting points that in a short resumé it is impossible to consider any but the leading features. Those interested in the subject are recommended to obtain the journal and study the paper with the attention it deserves.

D. G. MARSHALL.

CLINICAL NEUROLOGY.

HERPES ZOSTER WITH PATHOLOGICAL CHANGES IN THE

(62) SPINAL CORD. (*Herpes zoster mit pathologisch-anatomischen Veränderungen im Rückenmark.*) ARENT DE BESCHE, *Centralbl. f. allg. Pathol.*, Okt. 1910, S. 897.

SINCE the observations of Bärensprung in 1861, it has been generally assumed that the lesions in herpes zoster are in the spinal

¹ On the peculiar morphology of a trypanosome from a case of sleeping sickness and the possibility of it being a new species. Stephen and Fantham, *Proc. Royal Soc. Lond.*, Nov. 26, 1910.

ganglia. Cases with post-mortem findings have, however, been few and far between.

The author adds the following case of a woman, æt. 52, who had developed herpes zoster in the left side in the lumbar region after a severe attack of neuralgic pain. There was severe pain along the vertebral column. After about a month the patient became unconscious and died. Post-mortem, small scars were to be seen all along the distribution of the 12th, 11th, and part of the 10th spinal nerves. With the exception of a few small petechial hæmorrhages in the pia nothing was to be seen in the brain. Portions of the spinal cord were softened, and there was marked injection of the vessels. There were no pathological changes of note in the other organs. On examining the spinal ganglia changes were found only in three, viz., 10th, 11th, and 12th left dorsal ganglia. The changes were most marked in the 12th. There was marked engorgement of the vessels, with small hæmorrhages here and there. There was well-marked, diffuse, small round-cell infiltration. The ganglion cells were, on the whole, well preserved, but in the case of a few the nuclei failed to stain, and there was other evidence of degeneration. In specimens stained for bacteria none were found.

As regards changes in the cord, round-cell infiltration was found in the grey matter, especially round the vessels, which were everywhere engorged. In places hæmorrhages could be seen, and there were slight degenerative changes in the nerve cells. These changes were found throughout the cord, but more particularly in the dorsal region. In the skin round-cell infiltration was found around blood vessels and nerves. There were small hæmorrhages and marked engorgement of vessels.

JAMES MILLER.

ZOSTER IN THE REGION OF THE SMALL SCIATIC WITH
(63) **GENERALISED ABERRANT VESICLES.** (*Un cas de zona de la région du petit sciatique avec vésicules aberrantes généralisées.*) F. BALZER and BURNIER, *Bull. de la Soc. franç. de derm.*, 1910, p. 183.

A MAN, aged 37, was admitted to hospital with zoster in the region of the small sciatic. Two or three days after the principal eruption isolated vesicles appeared on the forehead, in the beard, on the right forearm, left shoulder, thorax, abdominal wall, loins, penis, right groin and calf. These aberrant vesicles were smaller and dried up more quickly than the primary lesions. There was no spinal lymphocytosis.

J. D. ROLLESTON.

**HERPES OF THE BUTTOCK, PERINEUM AND SCROTUM, WITH
(64) COMPLETE RETENTION OF URINE AND FÆCES.**

(Zona de la fesse, avec retention complete d'urine et des
matières fécales.) PARSAT, *Ann. de dermat. et de syph.*, 1910, p. 332.

A RECORD of a case in which retention of urine and fæces developed simultaneously with an eruption of herpes, and lasted for twelve days.
J. D. ROLLESTON.

**ON THE POSSIBILITY OF DETERMINING THE LEVEL OF
(65) LESION IN THE SPINAL CORD BY CERTAIN REFLEX
DISTURBANCES.** J. BABINSKI and J. JARKOWSKI, *Neuro-
logja polska*, Vol. i., Nr. 1, 1910.

It is known that complete section of the spinal cord in some animals causes the appearance or the increase of reflexes in the part of the body below the section, and the sphere of the increased reflexes corresponds to the area of anæsthesia. But when instead of simple section the spinal cord is injured longitudinally, then anæsthesia and increase of reflexes extend to different levels; the first corresponds to the upper limit and the second to the lower limit of the lesion. If the incomplete destruction is not sufficient to produce paralysis and complete anæsthesia, nevertheless disturbances may occur in the reflexes, very similar to those in complete interruption of the spinal cord. The authors describe three cases (one tumour of the spinal cord and two cases of pachymeningitis tuberculosa), in which stimulation of the skin on the lower limbs (for example, pricking with a pin) causes movement of the affected (paralysed) limb. The movement depends in strength and in form on the point at which the limb is irritated; there may be movements of extension of the leg and flexion of the knee, etc. It is possible to produce similar reflex movements, but less marked, by stimulation of the skin of the abdomen as far as the upper limit of anæsthesia. The authors are inclined to think that these reflex movements might perhaps be produced also in cases of transverse spasmodic paralyses without anæsthesia.

J. HANDELSMAN.

**INFANTILE PARALYSIS WITH MENINGEAL ONSET. MENIN-
(66) GEAL FORMS OF HEINE-MEDIN'S DISEASE.** (Paralysies
infantiles à début méningitique. Formes méningitiques de
la maladie de Heine-Medin.) A. NETTER, *Bull. et mém. de la Soc.
méd. des Hôp. de Paris*, 1910, xxx., p. 444.

SINCE the summer of 1909 infantile paralysis has been unusually frequent in France (*v. Review*, 1910, pp. 35 and 557). About one-

third of the cases have presented during the initial period symptoms suggestive of epidemic cerebro-spinal or less frequently of tuberculous meningitis. The cerebro-spinal fluid in some of these cases showed a lymphocytosis, but this finding was not constant. In addition to the cases in which the meningeal symptoms were followed by permanent paralysis with atrophy and RD., cases were noted in which the paralysis was of short duration and ill-marked. Fourteen illustrative cases are recorded.

J. D. ROLLESTON.

A SMALL EPIDEMIC OF POLIOMYELITIS WITH MENINGEAL

(67) **SYMPTOMS.** (*Note sur une petite épidémie de poliomyélite avec symptômes méningés.*) L. BERNARD and MAURY, *Bull. et mém. de la Soc. méd. des Hôp. de Paris*, 1910, xxx., p. 583.

A RECORD of seven cases in the department of Seine-et-Oise which occurred between the end of July and the beginning of October 1910. With the exception of a woman, aged 50, all the patients were children. Although the epidemic character of the outbreak was undoubted, there was no instance of contagion.

J. D. ROLLESTON.

SHOULD EPIDEMIC POLIOMYELITIS BE QUARANTINED?

(68) G. P. SHIDLER, *Pediatrics*, Dec. 1910, p. 810.

THIS paper first of all reviews the history of the great epidemics of infantile paralysis, and, secondly, gives in greater detail an account of the Nebraska epidemic as showing that the disease is contagious, or at least highly infectious, and should, therefore, be quarantined. Practical difficulties in enforcing quarantine and educating both physicians and laity may be expected in any place where it is attempted; but, as the author says, there is only one quarantine, "stay in or stay out." When they succeeded in enforcing quarantine in the affected areas during the Nebraska epidemic it was quickly stamped out. J. H. HARVEY PIRIE.

THE CARE AND MANAGEMENT OF THE TABETIC BLADDER:

(69) (1) **DIAGNOSIS**; (2) **ETIOLOGY**; (3) **PROGNOSIS AND TREATMENT.** J. DELLINGER BARNEY (Boston), *Boston Med. and Surg. Journ.*, Dec. 22, 29, 1910, Jan. 5, 1911, pp. 933, 985, 13.

THREE most valuable Papers by a genito-urinary surgeon, worthy of the closest study by all clinical neurologists. Barney finds that—

(1) Trabeculation of the bladder in tabes is found in more than 80 per cent. of cases, and may occur before any symptom or other sign of vesical disturbance.

(2) In tabetic bladders it is found in the fundus and side walls only, in typical cases. It is more delicate and regular than that seen with mechanical obstruction.

(3) It is probable that it is due to a primary detrusor hypertrophy.

(4) Residual urine is found in more than 70 per cent. of cases, often before any symptoms begin.

(5) In over 50 per cent. of all cases the urine is infected.

(6) Cystoscopy is generally a painless procedure, a fact which is of some diagnostic value.

(7) Urinary disturbances, variable in character, are observed in over 90 per cent. of all tabetics.

(1) The bladder is guarded by two sphincters, an internal of smooth fibres and an external of striated fibres, of which each has its special power of resistance.

(2) The function of urination is controlled by branches from the hypogastric plexus (Nervi erigentes).

(3) The detrusor may contract reflexly without connection with the central nervous system.

(4) The urinary disorders of tabes are dependent on (a) a disturbance in the transmission of sensory impulses from bladder; (b) inco-ordination of the muscles of micturition; (c) urinary infection.

(1) Infection of urinary tract occurs in over 50 per cent. of tabetics.

(2) Mortality from this cause is nearly 60 per cent.

(3) Catheterization and bladder irrigation, at regular and frequent intervals, combined with the constant use of an efficient urinary antiseptic, will (a) delay, prevent, or reduce the activity of urinary infection; (b) postpone the appearance of residual urine, or diminish its amount if present; (c) relieve symptoms.

(4) Re-education of the muscles of micturition, combined with local treatment, will cure or relieve most of the symptoms which harass the life of the tabetic. It is, therefore, of the utmost importance. (The re-education method was learnt by Barney from the late Samuel Alexander, of New York, and Barney's results have been most encouraging.)

(5) The combined treatment of the nervous system and of the urinary tract is essential for the welfare of the patient.

The reviewer hopes that before the end of this year an accomplished genito-urinary surgeon will be appointed at the National

Hospital for the Paralysed, London, and he points out that only last year his old hospital, Guy's, appointed simultaneously a physician for nervous diseases and a genito-urinary surgeon. The combination is significant, and he hopes it was not accidental.

LEONARD J. KIDD.

THE TREATMENT OF DISSEMINATED SCLEROSIS: A SUGGESTION. E. FARQUHAR BUZZARD, *Lancet*, Jan. 14, 1911, p. 98.

ARGUING from the admitted probability that the lesions of disseminated sclerosis are due to some toxic agent, although this has not been discovered, and from the similarity to cerebro-spinal syphilis in that both are characterised by paroxysmal attacks occurring with free intervals, the author suggests the trial of "606" in the hope of being able to permanently eradicate the supposed causal organism.

J. H. HARVEY PIRIE.

AN EXTRA-DURAL CHORION EPITHELIOMA AT THE LEVEL OF THE MIDDLE DORSAL REGION OF THE CORD. (Ein extradurales Chorionepitheliom im Niveau des mittleren Dorsalmarkes.) AUERBACH, *Neurolog. Centralbl.*, No. 24, Dec. 16, 1910.

THE author records a case of complete flaccid paraplegia, in a woman aged 27. There was anæsthesia of the legs and trunk, up to the costal margins and twelfth dorsal spine. The abdominal, patellar, and the tendo Achilles reflexes were lost. There was no ankle clonus and no Babinski reflex. There was retention of urine and fæces.

Ten days previous to the author's first examination the uterus had been curetted, on account of persistent metrorrhagia; within the next four days the paraplegia had developed. On careful inquiry, however, a history was obtained of pain under the right scapula, radiating over the right side of the chest, of ten months' duration, and of pain on the left side in the same regions for two months. For several months there had been slowly increasing weakness in the legs. The case terminated fatally in four months. The autopsy revealed a layer of new-formed tissue on the spinal dura mater, from the fourth to the eighth dorsal segments. This tissue compressed the spinal cord markedly; the pia mater, dura mater, and cord were adherent; and the cord was completely softened at the seat of compression.

The layer of new tissue in the dura mater consisted chiefly of blood, fibrin, and blood pigment, but it contained a small patch of new growth, which presented the structure of a malignant

atypical chorion epithelioma. The lungs were studded with nodules of chorion epithelioma, which were so infiltrated with blood that they presented, macroscopically, the appearance of hæmorrhagic infarcts.

The uterus had not been preserved for microscopic examination; but from the history it appeared probable that there had been an abortion some months previous to the onset of the spinal symptoms. The author considers it probable that disseminated chorion epithelial cells had caused the development of a chorion epithelioma in the spinal dura mater and in the lungs, followed by compression myelitis and gangrene of the lungs. The compression myelitis was caused not by the dural tumour itself, but by the hæmorrhage which surrounded the growth.

R. T. WILLIAMSON.

**MULTIPLE ENDOTHELIOMA OF THE SPINAL DURA ALONG
(72) WITH TUBERCULOUS PACHYMENINGITIS. (Multiple
Endothelioma der Dura spinalis im Bereich einer Pachy-
meningitis tuberculosa.) HENSCHEN, *Beitr. z. path. Anat.*,
Bd. 49, H. 1, S. 86, 1910.**

AUTHOR considers the case worth recording as being an example of a tumour formation occurring along with, and probably caused by, a chronic irritation of a specific nature. At the same time the case is of interest as throwing light upon the endothelial elements of the dura and their development under pathological conditions.

Patient, a male, married, with healthy children. Had an injury to the spine as child of four; since this accident a spinal curvature was present in the lumbar region. For several years he had a cough, and suffered from difficulty in breathing. Much worse during the last six months with pain in the back and weakness. Patient died after fourteen days in hospital.

Post-mortem.—Chronic tuberculosis of twelfth dorsal and first and second lumbar vertebræ. Tuberculosis of the dura. Small multiple tumours of the spinal dura in the same region. Tuberculous broncho-pneumonia of the left upper lobe.

Microscopically.—The tumour consists almost entirely of cells, polygonal and fairly large. Bands of fibrous tissue small in amount divide the tumour into masses of cells. Blood vessels are few. The nuclei of the tumour cells are round or oval, usually with one, sometimes with several, in each cell. Mitotic figures are few. Among the cells there are spaces small and round with no obvious contents. Psammoma granules occur, but are few in number. In other parts of the dura where there are no tumours, but where tuberculosis was observed, similar groups of cells are

found. No undoubted tuberculous granulation tissue and no tubercle bacilli were found.

The author considers that the absence of any tumours outside the area of inflamed dura is strong evidence in favour of the two conditions being closely related etiologically. He considers that the tumours arose from the lining endothelium of the dura, and not from the islands of arachnoid elements described by M. B. Schmidt. For the existence of such cell islands the author sees no evidence, at any rate in the lumbar portion of the dura.

JAMES MILLER.

**EXTRA-MEDULLARY SPINAL CORD GLIOMA, WITH SUCCESS-
(73) FUL OPERATION AND COMPLETE RECOVERY.** INGLIS,
KLINGMAN, and BALLEEN, *N.Y. Med. Journ.*, Nov. 19, 1910.

In this case the symptoms were those of a slowly progressing segmental spinal affection, which, in the earlier stage of the development, produced the symptoms of a unilateral lesion of the cord (Brown-Séquard's symptom-complex). Nerve-root irritation was a prominent symptom from the first. An operation was performed, and an extra-medullary tumour found within the dura mater, to the left of the cord. The tumour was attached to the subpial neuroglia and the posterior nerve root of the seventh dorsal nerve. Microscopic examination showed that the growth was a glioma. The tumour was successfully removed, the patient recovered from the operation, and the symptoms almost completely disappeared. The patient returned to business seventeen months after the operation. There was then no disturbance of gait, except slowness in starting to walk. The authors consider "that an exploratory operation is indicated in every case in which symptoms of compression as a probable result of spinal tumour are present, or in which spinal tumour cannot be eliminated from the diagnosis."

R. T. WILLIAMSON.

**SUBPIAL MACROSCOPIC INTRA-MEDULLARY SOLITARY
(74) TUBERCLE, AT THE LEVEL OF THE FOURTH AND
FIFTH CERVICAL SEGMENTS; OPERATION; RECOVERY.**
(Subpialer, makroskopisch intramedullärer Solitärtuberkel in
der Höhe des vierten und fünften Cervicalsegmentes; Opera-
tion; Genesung.) O. VERAGUTH and H. BRUN, *Correspondenz-
Blatt für Schweizer Aerzte*, Nos. 33 and 34, 1910.

THIS is apparently the first case on record of a tumour *within the spinal cord (intra-medullary)*, in which the growth has been removed successfully, with disappearance of nearly all of the spinal

symptoms. The case was one of solitary tubercle, under the pia mater, and within the cord substance, at the level of the fourth and fifth cervical segments.

At the outset of the illness there was pain with stiffness in the neck, and an area of diminished sensation, for touch and pain, over the left shoulder. The knee jerks became increased, ankle clonus and the Babinski and Oppenheim reflexes developed on both sides. Then the left arm and leg became paralysed, and afterwards the movements of the right arm and leg became impaired. The left arm became totally anæsthetic, and on the right side (arm, trunk, and leg) sensation for pain, cold, and warmth became diminished.

The left phrenic nerve became paralysed, X-ray examination showing defective movements of the left side of the diaphragm. A spinal tumour was diagnosed. Operation was performed. In the subdural space no tumour was found, but a localised resistance was felt at the region of the cord where the growth had been localised. The pia mater was divided, and a small tumour was found imbedded in the substance of the spinal cord. The tumour was enucleated: it weighed 1.22 gramme, and was 17 mm. long, 11.5 mm. broad and 9.5 mm. thick. It was a solitary tubercle, surrounded by a thick connective tissue capsule. The symptoms rapidly subsided after the operation, and the patient left the hospital 56 days later and returned to his work. On examination, 91 days after the operation, the remaining motor and sensory symptoms were only very slight. At a later date, 130 days after the operation, he was able to walk quite well, and could lift a chair with the left arm (on the right side motion was normal).

R. T. WILLIAMSON.

A PECULIAR FINDING IN THE FLUID IN CASES OF TUMOUR

(75) **OF THE SPINAL CORD.** (*Ein eigentümlicher Liquorbefund bei Rückenmarkstumoren.*) KLIENEGER, *Monatsschr. f. Neurol. u. Psychiat.*, Okt. 1910, S. 346.

THE author's series comprise four cases, the first of which has previously been published. Besides these, the literature contains only two other similar cases. In Case 1 the fluid obtained by lumbar puncture was clear, amber-coloured, contained a large amount of fibrin and 3 per cent. of albumen, and showed a lymphocytosis. At operation a fibroma of the cauda equina was found dividing the sub-arachnoid space into two parts, the upper of which contained clear fluid and the lower the amber fluid. The author believes that the fluid was true spinal fluid and not the contents of a cyst. Case 2 gave similar fluid to the previous;

this case also was one of tumour of the cauda equina. The fluid of Case 3, in addition to presenting the same characteristics as in the former cases, showed also leucocytes; but the spinal condition was complicated by progressive paralysis, and the presence of these cells was probably due to this latter disease. The local spinal condition was diagnosed as a luetic pachymeningitis hypertrophica, and under antisiphilitic treatment the spinal condition greatly improved. The fluid of Case 4 was similar in nature to that of the foregoing cases, but the amount of albumen was greater. At the operation there was found in the region of the fifth to eighth dorsal vertebræ a cystic condition of the membranes which, although subsequent pathological investigation showed it to be unlike any known condition, gave rise to a clinical picture identical with that of a tumour in this situation.

Hence all the cases showed a tumour extra-medullary in position. The yellow coloration of the fluid was probably due to some blood derivative.

F. ESMOND REYNOLDS.

**ON OSTEOMA OF THE SPINE CAUSING COMPRESSION OF
(76) THE SPINAL CORD.** M. BORNSTEIN and W. H. STERLING,
Neurologja polska, Vol. i., Nr. 1, 2, 1910.

The case of the authors concerns an old man, aged 75 years, whose illness began ten years ago with pain in the right thigh and in the lower part of the back, which later spread also to both the lower limbs. Gradually the patient began to hobble on his right leg, and had paræsthesias in both legs. Eighteen months after, the right hand and leg were paralysed and contracted, and there were frequent spasms. Some months after, weakness appeared in the left hand and leg. Only six weeks before admission to the hospital, after a fall from a carriage, the illness became worse—the paralysis of the limbs and the contraction of the muscles were more marked and the spasms more frequent. The following symptoms were then observed in the ward: inequality of the pupils, complete paralysis of all four limbs, excessive contraction of the flexor muscles of the lower legs, and extraordinary hypertony of the muscles in all limbs. Over the whole body (with the exception of the head) there were very marked sensory disturbances, tactile sensibility alone remaining normal. The reflexes were exaggerated in the upper limbs and also the knee jerks, but the ankle jerks were absent. In both feet the Babinski sign was present. The abdominal reflexes were absent.

The patient died from an accidental cause, and at the post-mortem examination a large osteoma was found on the posterior surface of the body of the third cervical vertebra and several small osteomata on the fourth, causing compression most marked on the

second, third, and fourth cervical segments of the spinal cord, where the grey and the white matter were considerably destroyed. The authors describe very minutely the microscopical changes in the spinal cord, especially with reference to the inequality of the pupils, the absence of ankle jerks, and the dissociation of sensibility.

J. HANDELSMAN.

THE ORTHOPEDIC TREATMENT OF SPINAL PARALYSIS. F.

(77) LANGE, *Arch. of Pediat.*, Nov. 1910, p. 837.

THIS paper commences by a recommendation to use an orthopedic bed or plaster jacket to immobilize the spine during the acute stage, but so far there is no actual evidence of the value of this proceeding. The next part is concerned with the restoration of function in the paralysed muscles and the prevention of contractions. He has nothing to add to the usual methods of massage, electricity, baths, etc., beyond a warning against too hard massage and the overdoing of orthopedic apparatus at this stage, as it is likely to injure healthy muscle as well as paralysed, and bring about more atrophy. He limits the application of orthopedic splints as much as possible, both with respect to the length of the time they are worn and to the weight of the apparatus (examples given). Contractions may, in this way, be prevented, but many cases, sooner or later, want relief from apparatus. For this purpose there are several available procedures: redressment, with or without tenotomy, transplantation of nerves, of tendons, and arthrodesis. In connection with these much practical advice is given. Redressment is always necessary as a preliminary operation when a contraction has taken place, but the author, in opposition to Lorenz, considers that, if treatment is restricted to this means, a relapse is almost certain to occur. Neuroplasty he considers very disappointing in its results and outlook. Arthrodesis is sometimes the best measure, especially when the paralysis is an extensive one; although the joint is stiffened, it may be of more use than a flail-joint. He uses artificial joint ligaments of silk in certain cases. If all the muscles are not paralysed, but some strong ones are well-conserved, tendon-transplantation takes the place of arthrodesis. Details are given of a special method of preparing and using silk for making artificial tendons to lengthen the muscle; for these the original paper must be referred to. It is pointed out to what a large extent these artificial silk tendons become penetrated and surrounded by very firm, thick connective tissue. The transplantation into the periosteum (which he favours rather than the old Nicoladonian transplantation) and the silk tendons must be assisted by a proper plan of operation, the principle of which is that unimportant functions must be sacrificed

and an endeavour made only to re-establish the most important movements. Finally, careful supplementary treatment with night splints and supports is necessary. Even with all this care the writer often found that transplanted muscles did not do their work well, especially in the case of the foot. The reason was found to be that the transplanted tendon had united firmly by tendinous adhesions to bones, ligaments, and fasciæ, rendering every movement of the tendon, and with it of the foot, impossible. These may be avoided, and success assured, by boring a channel for the muscle directly through adipose tissue, so that the transplanted muscle is always separated by a layer of fat from the fascia and other tissues.

J. H. HARVEY PIRIE.

MENINGITIS IN PREGNANCY. (*Les méningites chez la femme (78) enceinte.*) L. POULIOT, *Arch. gén. de méd.*, 1910, p. 641.

MENINGITIS is rare in pregnancy, but is probably often mistaken for other conditions. Pouliot has collected 34 cases from recent literature. Of these 12 had tuberculous meningitis and 19 meningitis due to other infections, but only 4 were instances of epidemic cerebro-spinal meningitis. Primiparæ and multiparæ are attacked with equal frequency. Of 28 cases in which definite information was obtainable, in all but 2 the onset occurred in the last three months of pregnancy, in more than half in the ninth month. The symptoms differ from those of classical meningitis, hence the frequent errors of diagnosis. Convulsions occur in about one-half of the cases. The diagnosis from eclampsia is to be made by estimation of the blood-pressure, hypertension which is invariable in eclampsia being never found in meningitis. Lumbar puncture should also be performed. The gravity of the prognosis is shown by that fact that only one of the 34 cases recovered—one of epidemic cerebro-spinal meningitis treated by serum. Premature labour should be induced by the most rapid means available, except in epidemic cerebro-spinal meningitis, in which the employment of serum may be sufficient.

J. D. ROLLESTON.

PNEUMO-BACILLUS CEREBRO-SPINAL MENINGITIS. (*Méningite (79) cérébro-spinale à pneumobacilles.*) L. GUINON and G. SIMON, *Bull. et mém. de la Soc. méd. des Hôp. de Paris*, 1910, xxx., p. 501.

A BOY, aged 5 years, was admitted to hospital for meningitis on October 25th, on the third day of disease. On admission the cerebro-spinal fluid was opalescent, and contained abundant polymorphs. On the 26th it was definitely purulent, and contained

pneumo-bacilli. On the 27th several patches of herpes developed in the right frontal and temporal regions. On the 28th marked improvement occurred. Motor weakness in the lower limbs was still present on the 26th day, and pre-existing otitis media was aggravated by the development of labyrinthine disease. The pneumo-bacilli were present for only a short time in the cerebro-spinal fluid, being found on only one of the three occasions in which lumbar puncture was performed. J. D. ROLLESTON.

THE PATHOGENY OF PNEUMONIC HEMIPLEGIA. (Contribution (80) à l'étude de la pathogénie des hémiplésies pneumoniques.) G. A. J. CHAPPET, *Thèses de Lyon*, 1909-10, No. 104.

CHAPPET has collected from literature 36 cases of pneumonic hemiplegia. It is most frequent in the old. Five were below twenty, 7 between twenty and forty, 8 between forty and sixty, and 14 above sixty. In the young, recovery almost always takes place, but in the old the condition is usually fatal. It usually occurs in the course of pneumonia, rarely after the crisis. The onset is as often insidious as sudden. The paralysis is usually flaccid. In only a third of the cases were macroscopical lesions of the brain and meninges found, viz., hæmorrhage, softening, purulent meningitis, and cerebral abscess of pneumococcal origin. Ischæmia is the chief cause of hemiplegia in the old; softening only occurs when survival exceeds four days. Ischæmia may sometimes be due to embolism, although pneumococcal endocarditis rarely produces embolism.

In addition to that due to mechanical lesions is the hemiplegia which is caused by the direct action of the pneumococcus or its toxins on the brain and meninges. In this group are included not only the hemiplegias due to purulent meningitis, but also those due to serous meningitis, meningo-encephalitis and encephalitis. The presence of pneumococci in the cerebro-spinal fluid, with or without leucocytosis, is the only means of diagnosis. It is difficult to determine precisely the significance of cerebral and meningeal œdema so often noted post mortem. Apart from the rare cases of pneumonic hemiplegia due to uræmia, this œdema may be the result of vaso-motor disorders, but as a rule it is the sign of an attenuated meningeal infection, as is shown by the occasional presence of pneumococci. J. D. ROLLESTON.

TUMOURS OF THE THIRD VENTRICLE, WITH THE ESTABLISHMENT OF A SYMPTOM-COMPLEX. WEISENBURG, (81) *Brain*, Part 103, Vol. xxxiii., 1910, p. 236.

THE author has collected twenty-seven cases from the literature and has added three cases which he reports for the first time. He

considers that it is possible to establish a fairly well recognizable symptom-complex for some of these cases. Tumours within the third ventricle cause specific symptoms only when they compress or invade surrounding structures. They may be divided into three classes—(1) Tumours lying on the floor of the ventricle and obstructing neither the foramina of Munro nor the aqueduct of Sylvius; (2) those obstructing the foramina of Munro; (3) tumours obstructing the aqueduct of Sylvius. In practically every case internal hydrocephalus results, with consequent headache, choked disc, vomiting and inco-ordination of a cerebellar type, either by interference with the choroid plexus or by obstruction of the flow of cerebro-spinal fluid. In addition, tumours of class (1) may produce paresis of the limbs on one or both sides by pressure on the internal capsule and also thalamic symptoms, but these only when there is direct invasion by the growth. Of class (2) only one case is reported. In addition to the signs of raised intra-ventricular pressure, this patient suffered from temporary amblyopia and increased headache whenever he moved from a position in which his body was erect and his head tilted backwards. Post-mortem the tumour was found attached to the choroid plexus, freely movable, and in one position closing the foramen of Munro. Tumours of class (3), which compress or invade adjacent structures, cause corresponding symptoms. These are—(1) Paralysis of associated ocular movement and of convergence upwards and, less commonly, to either side and downwards, from affection of the third nuclei and of the posterior longitudinal bundles; (2) ataxia of the cerebellar type, due to involvement of the red nucleus or superior cerebellar peduncles; (3) protrusion of the eyeballs from pressure upon the cavernous sinus and the veins of Galen; (4) paresis of the limbs on one or both sides. Tumours of the third class may be differentiated (*a*) from pineal tumours by absence of abnormal growth in length and increase of hair, adiposity, premature sexual development, and mental precocity; and (*b*) from tumours of the anterior corpora quadrigemina by the greater number of structures involved, paresis of the limbs being uncommon in the latter, and by the absence of disturbance of hearing.

Finally, tumours of the third ventricle do not cause specific mental symptoms.

H. RIDLEY PRENTICE.

A CASE OF PINEAL TUMOUR. (*Sur un cas de tumeur de (82) l'épiphyse.*) RAYMOND, *Journ. des Prat.*, Oct. 22, 1910, p. 691.

THE case, which was not verified by autopsy, was that of a child aged 10 years.

The chief features were a left hemiplegia, with ataxy, nystagmus, and blindness. There were, in addition, hydrocephalus,

and such general symptoms of intracranial pressure as headache and vomiting. There was, in addition, general adiposity with rudimentary genitalia, although pubic hair was already present. The author considers the diagnosis of a pituitary tumour, but discards it owing to the cerebellar symptoms which were present, and accepts the diagnosis of pineal tumour on what seems insufficient evidence.

C. M. HINDS HOWELL

**STRANGULATION OF THE NERVI ABDUCENS BY LATERAL
(83) BRANCHES OF THE BASILAR ARTERY IN CASES OF
BRAIN TUMOUR. HARVEY CUSHING, *Brain*, Part 103,
Vol. xxxiii., 1910, p. 204.**

THE author draws attention to the insufficiency of the theories which have been brought forward to explain the frequent occurrence of abducens palsy as a "false localizing sign" in cases of brain tumour. Consideration of a case, in which a tumour had displaced the abducens backwards in such a way that it had become caught by and kinked round the A. auditiva interna, led him to examine the brain-stems of thirty-nine cases of tumour or "pseudo-tumour" and twenty cases of intra-cranial lesions other than tumour. The points investigated were—(1) The anatomical relationship between the sixth nerve and the lateral branches of the basilar artery; (2) the presence or absence of grooving of the pons by the arteries; (3) the question of correlation between observed abducens palsy and grooving of the pons and of the interposed sixth nerve.

It was found "(1) that the arteries, contrary to the usual anatomical description, generally overlies the nerves; (2) that in a series of brain tumour cases the vessels which normally encircle the brain-stem often produce a more or less deep grooving of the nervous tissues; (3) that the abducentes in many of these cases are deeply constricted; and (4) that a large percentage of the clinical histories of cases which show post-mortem a pontine grooving, with accompanying implication of the nerves, record either subjective diplopia or the actual presence of a convergent squint observed during life."

Further, this arterial grooving is relatively rare in brains not the seat of true tumour, and is more common in cases of sub-tentorial lesions. In cases of extreme constriction the nerves may be found degenerated and replaced by scar-tissue at the point of constriction.

The view is submitted that the abducens palsy is produced by strangulation of the nerve between an enlarged pons and a rigid artery encircling it.

Reference is made to similar vascular indentation affecting the Nn. oculomotorii and to the direct pressure effects on nerves of atheromatous vessels.

H. RIDLEY PRENTICE.

METHODS OF OPERATIVE TREATMENT OF HYPOPHYSEAL

(84) **TUMOURS BY THE INTRA-NASAL ROUTE.** HIRSCH,
Arch. f. Laryng., Bd. 24, H. 1, 1910, pp. 129-177.

THE writer contrasts the intra-nasal method of removal of such tumours with Löffler's method. This latter operation consists in turning the nose completely to one side and excising the connecting muscles and septum.

In the writer's opinion the intra-nasal method is preferable, because—

- (i) It is performed under local instead of general anæsthesia.
- (ii) There is a minimum loss of blood.
- (iii) There is no disfigurement.

In other respects the results of the two operations are the same, and the danger of subsequent meningitis is equal in both cases.

A full description is given of four cases in which the intra-nasal operation was performed.

In Case I. the sphenoidal sinus was widely opened and a cystic hypophyseal tumour found which exuded fluid on puncture, with a small portion of cyst wall. The right eye regained full visual acuity, the left remained amaurotic.

In Cases II.-IV. submucous resection of the septum was employed, and both sphenoidal sinuses were opened.

In Case II. the tumour was removed as pulp through an incision in the dura. The visual acuity of the left eye rose from $\frac{6}{60}$ to $\frac{6}{18}$.

In Case III. the dura was incised through a small opening in the hypophyseal swelling, but the tumour was not located. Nevertheless the sight improved slightly.

In Case IV. a piece of the hypophyseal tumour about the size of a cherry was removed. The visual acuity of the right eye rose in six weeks from .2 to .5, that of the left eye remained unaltered.

DONALD ARMOUR.

ABLATION OF THE HYPOPHYSIS IN A CASE OF ACRO-

(85) **MEGALY.** (*Ipofisiectomia in una acromegalia.*) ODOARDO
ASCENZI, *Riv. di Patolog. nerv. e ment.*, Vol. 15, f. 12.

THE author describes a case of acromegaly of twelve years' duration in a woman of 42, on whom ablation of the pituitary by

the palato-pharyngeal method was attempted. The tumour was successfully scooped out, and the cavity stuffed with gauze, draining into the nasal cavity; an attempt to remove the plugging and to reconstitute the palate a week later was followed by collapse of the patient, and death a few hours after the operation. The author then proceeds to review the available literature on the operation of hypophysectomy. He notes that eight methods have been practised:—(1) Hypophysectomy by the temporal frontal path (Caton and Paul). (2) By the temporal path (Horsley, Cassell). (3) Frontal intradural path (Killian). (4) Frontal extradural path (Krause). (5) Frontal path with exenteration of an orbit (Schloffer). (6) Nasal method (Giordano). (7) Method of Loewe by pharyngotomy. (8) By the palatal path (Konig). (9) The bucco-nasal method of Loewe. (10) The intermaxillary method of Kocher Hertle. (11) New method of Schloesser, clearing out orbit and resection of malar bone. (12) The palato-pharyngeal method of Durante.

The extra-cranial route is the one preferred; only five cases of hypophysectomy by the intra-cranial route are recorded out of a total of fifteen.

Of the fifteen cases operated on six died. In the cases that survived the operation, improvement or cure was noted both with regard to acromegalic symptoms or those symptoms referable to intra-cranial pressure.

The author concludes that the operation is contra-indicated when the tumour tends to exclusively invade the cerebrum, whilst in tumours burrowing into the basis cranii the prospect of a cure from operative interference is not unfavourable. The author notes that in a case with pronounced acromegalic symptoms together with optic atrophy and pressure symptoms, in which an operation was refused, a spontaneous cure apparently took place, the optic atrophy alone being permanent. The occurrence of such cases, and the terrible mutilation occasioned by most of the methods of operation practised, together with their high mortality, justify a serious warning against lightly recommending operation in cases of pituitary tumour.

F. GOLLA.

CRANIECTOMY IN CEREBRAL TUMOURS. BABINSKI, *Journ. des*
(86) *Prat.*, No. 44, 1910, p. 712.

THIS paper deals with the treatment of cerebral tumours, with special reference to three cases.

1. The patient, a woman, showed symptoms of cerebral cedema, thus indicating a compression probably by an intra-cranial neoplasm. The tumour might be a syphilitic gumma, hence in such

cases mercurial treatment should be employed, followed by lumbar puncture. If this fails to reduce the oedematous neuritis and headache, craniectomy should be resorted to. On this occasion it was performed in the left cerebellar region, where the neoplasm appeared to be localised.

2. A patient, first treated unsuccessfully by mercury and lumbar puncture, then underwent a "decompression" operation in the occipito-cerebellar region. He lost all his previous symptoms, such as headache and optic neuritis, and his powers of vision completely returned.

3. A man, suffering for a year from similar symptoms and with threatened loss of sight. A diagnosis of pseudo-neoplasm was made. A "decompression" operation only afforded slight relief, but extirpation caused complete recovery.

Cerebral hernia and hemiparesis following the second operation may be remedied by cerebral puncture.

The important point is the necessity for comprehension of the early symptomatology of such cases, lest operation should be delayed till too late to prevent loss of sight, hearing, etc.

DONALD ARMOUR.

**THE SURGICAL TREATMENT OF INTRA-CRANIAL TUMOURS,
(87) AS OPPOSED TO CONSERVATIVE THERAPY. SIR VICTOR
HORSLEY, *Neurol. Centralbl.*, Nov. 1, 1910, pp. 1170-1178.**

THE writer states that tumours of the brain are never cured by therapeutic methods, which merely serve to prolong the agony.

He divides the symptoms into classes:—

(a) *Primary Activities.*

Every case of localised epilepsy which is not of undoubted idiopathic origin should be operated on. Localised epilepsy includes all cases where the point of origination of the attack can be localised in a single lobe of the brain. For such cases a provisional operation will give the surgeon information as to the position of the new growth, and, in the case of a negative result, will cause no injury to the patient.

(b) *Secondary Activities.*

Every case of progressive motor or sensory paralysis of intra-cranial origin should be treated by a provisional operation.

Recognition of the first symptoms of injury in the various lobes of the brain is of the highest importance, especially as destruction of any part means corresponding loss of capacity, this loss being only discovered later owing to the high degree of representation

that obtains. Hence it follows that progressive loss of sensory power is an indication for operation. A double operation may be performed, but the danger of shock from a single operation in small lesions is slight.

On the refusal of a patient to submit to operation involving possible increase of the paresis, a simple decompression has sometimes been sufficient to destroy the glioma, but observations have been too few to draw conclusions as to the factors in this fortunate result. Hence extirpation should be employed except when it means the destruction of representation of a single faculty, *e.g.* speech.

If it is thought well to attempt to lessen the pressure on the inner side of the skull, the opening should be made as near as possible to the lesion, so as to avoid future trouble should it be necessary to remove the growth.

Palliative operation should only be employed when the growth lies in a spot from which it can only be removed with danger or when no localisation is possible.

With regard to anti-syphilitic treatment—

1. Such treatment should not be continued for more than six weeks unless definite improvement is made.

2. Treatment of intra-cranial tumours of syphilitic origin should be remodelled from a consideration of the resemblance of the sub-dural space to the intra-peritoneal cavity. In cerebro-spinal lues the writer has found good results from opening the sub-dural cavity and washing out with sublimate solution. A gumma should be entirely extirpated, but the above treatment is effective for pachymeningitis which always surrounds a gumma, and should also be employed in cases where optic neuritis is present. Thus all syphilitic infections of the nervous system should be treated by local application of mercury, which can be best carried out by sub-dural irrigation.

DONALD ARMOUR.

**ON RECURRENT MOTOR PARALYSIS IN MIGRAINE, WITH
(88) REPORT OF A FAMILY IN WHICH RECURRENT HEMI-
PLEGIA ACCOMPANIED THE ATTACKS. J. MICHELL
CLARKE, *Brit. Med. Journ.*, Vol. i., 1910, p. 1534.**

CASES of megrim and hemiplegia may be grouped thus: (1) *migraine secondary to structural lesions*—*e.g.* a symptom of onset in hemiplegia due to a vascular lesion or intracranial tumour; (2) *long-standing migraine complicated by paralysis*. Instances are, according to the author, only numerous in which migraine of long standing has issued in permanent paralysis, generally due to a vascular lesion. In some of these, one of the phenomena

of the aura of the attack, such as aphasia or hemiopia, has become permanent, but in others the permanent disability in no way corresponds to the aura; (3) *migraine attended by temporary paralysis*; (4) *ophthalmic migraine*. The accounts of these have, the author states, probably been written from two distinct groups of cases, "cases in which intermitting attacks of third nerve paralysis are preceded by attacks of headache corresponding in clinical aspect (including aura and heredity) to typical migraine, and do not end in permanent paralysis"; (5) cases which show periodic exacerbations, but in which from the first, or early in the course of the disease, there is a certain amount of persistent weakness which ends in permanent paralysis.

Six cases are here recorded which belong to the third group, the interesting feature being that four of these occurred in members of the same family (three generations). "Evidence as to four generations was available. The great-grandparents were said to be free from the affection, and had a very large family (the exact number was not ascertained), of whom four certainly—one son and three daughters, and possibly another son—were affected. Two of the daughters were unmarried; the third married a man not liable to migraine and had a daughter, who had at least one attack of migraine with paralysis."

EDWIN BRAMWELL.

EXOPHTHALMIC GOITRE. (*Les États Basedowiens.*) CLAUDE, (89) *Journ. des Prat.*, No. 50, 1910, p. 807.

THIS is the report of a clinical lecture. Claude distinguishes true exophthalmic goitre from cases of enlarged thyroid with palpitation, by injecting 4 minims ($\frac{1}{4}$ mgm.) of adrenalin solution. This causes no symptoms in true exophthalmic goitre, but increases the palpitation in the other cases.

J. G. GREENFIELD.

THE PURVIS ORATION ON THE TREATMENT AND PROGNOSIS OF EXOPHTHALMIC GOITRE. (90) HALE WHITE, *Lancet*, Dec. 3, 1910, p. 1599.

AN analysis is given of the state of health of forty-eight hospital and fifty-four private cases of exophthalmic goitre, treated by medical means, between the years 1888 and 1909.

The author finds the mortality to be only twice as great as the expected deaths at similar ages in actuarial tables. Many cases which did not improve in hospital recovered completely afterwards, some being benefited by pregnancy. About 60 per cent. of the cases had recovered completely, 15 per cent. had died. Contrasted

with this are eleven cases where surgical treatment was adopted, of whom four died as a result of the operation, and at most three were cured.

He advocates rest in bed for some weeks, preferably in open air, and, as drugs, Moabius' antithyroid serum and rodagen; in excitable cases hyoscine, paraldehyde and bromides; and digitalis in severe tachycardia.

J. GODWIN GREENFIELD.

PATHOGENESIS OF THE TOE PHENOMENON. ALFRED GORDON,
(91) *N.Y. Med. Journ.*, Nov. 19, 1910, p. 1004.

THE author considers the cutaneous reflexes as dependent on the cortico-spinal tracts, the deep reflexes on the rubro-spinal tracts, and the extensor plantar response to be, not a modification of the normal flexor response, but an entirely new phenomenon of encephalic and not spinal origin. The dissociation of this reflex from the tendon reflexes is seen—

1. In cases of almost complete transverse cord lesions, in which tendon reflexes are absent and extensor plantar response present.

2. In cases of similar nature with exaggerated tendon reflexes, but absence of plantar response. Of the latter he cites a case due to caries compressing the spine at the fifth dorsal segment. No hypothesis as to the tracts involved in the toe phenomenon is advanced.

J. GODWIN GREENFIELD.

ON BILATERAL PARALYSIS OF THE NERVI ABDUCENTIS
(92) **OCULI AFTER LUMBAR ANÆSTHESIA WITH TROPO-**
COCAINE .J. JELENSKA MACIESZYNA, *Neurologja polska*, Vol. i.,
Nr. 1, 1910.

THE author describes a case of bilateral paralysis of the sixth nerve after lumbar anæsthesia with tropococaine. Till now bilateral paralysis has been described only twice after lumbar anæsthesia with novocaine, and this seems to be the first case of such paralysis after anæsthesia with the above-mentioned drug. This case concerned a woman, 40 years of age, who had an operation for a uterine fibroma. An intra-lumbar injection was made of 2 per cent. tropococaine 0.09 mixed with scopolamin 0.00075. A few hours after the operation the patient complained of headache and vomited several times. On the ninth day after the operation she began to have double vision; and the presence of paralysis of the right abducent and paresis of the left abducent were confirmed. Improvement was very slow, and only nine months after the onset of the disease did the sight become normal.

J. HANDELSMAN.

OPHTHALMIC ZOSTER WITH SIMULTANEOUS ISOLATED ABDUCENS PARALYSIS. (Herpes zoster ophthalmicus mit gleichzeitiger isolierter Abducenslähmung.) LANGENHAN, *Zeitschr. f. Augenheilk.*, 1910, xxiii., p. 522.

A MAN, aged 60, with a history of syphilis and positive Wassermann's reaction, fell ill in the beginning of February with severe neuralgia in the region of V¹. Shortly afterwards herpes developed in the region of the supra-orbital, supra-trochlear, and lachrymal nerves. Five days later the patient complained of sudden diplopia, which corresponded to complete paralysis of the left abducens, and simultaneously there appeared a fresh eruption of herpes at the left internal canthus and on the left side of the nose, corresponding to the distribution of the infra-trochlear nerve. The sensibility of the skin in the region of V¹ and partly of V² was much diminished. The cornea was intact. Aspirin at first and later potassium iodide were given, and gradual improvement followed, so that by the beginning of April only very slight paresis could be detected. The simultaneous occurrence of herpes and abducens palsy was probably due to direct spread of neuritic or perineuritic disease of the naso-ciliary branch to the abducens, and indicates a neuritic rather than a ganglionic origin of the herpes. The syphilitic inflammation was at first confined to the frontal and lachrymal nerves and then spread to the naso-ciliary branch, finally involving the abducens. J. D. ROLLESTON.

CONTRIBUTION TO THE STUDY OF LEFT-SIDED RECURRENT PARALYSIS AS A RESULT OF MITRAL STENOSIS. (94) (Beitrag zur Frage der linkseitigen Rekurrenslähmung infolge von Mitralstenose.) D. G. COHN, *Arch. f. Laryngol.*, Bd. 24, H. 1, 1910.

THE patient, a female, æt. 31, complained of shortness of breath on exertion, and that her voice became easily tired. Laryngeal examination showed the left vocal cord fixed in the cadaveric position. Examination of the chest showed mitral stenosis. A skiagram showed an enlarged left auricle. Nothing abnormal was found on œsophagoscopy. The author was of the opinion that the recurrent paralysis was due to the cardiac lesion.

W. G. PORTER.

THE PSYCHOGENIC LABILITY OF THE BLOOD-PRESSURE
 (95) **AND ITS SIGNIFICANCE IN PRACTICE.** (*Die psychogene Labilität des Blutdruckes und ihre Bedeutung in der Praxis.*) P. SCHRUMPF, *Deut. med. Woch.*, 1910, p. 2385.

A RISE of blood-pressure should not be regarded as pathological until the influence of purely psychical causes can be excluded. Psychogenic lability signifies the tendency of the blood-pressure to rise suddenly and for a short time above the normal from purely psychical causes. By suitable experiments it can be shown to exist in almost anyone, but it is specially marked in the nervous and emotional. It chiefly affects the systolic pressure, leaving the diastolic unchanged, except in cases of arterio-sclerosis, when both are affected in the same degree. The rise of blood-pressure may be considerable (up to 125 cm. of water), and may appear suddenly as the accompaniment of intense emotion. By diverting the patient's attention the true value of the pressure can usually be estimated. It should be noted that psychogenic rises of blood-pressure occur not only with a normal vascular system but also with actual hypertonus.

J. D. ROLLESTON.

SOME INDICATIONS AND CONTRA-INDICATIONS FOR LUMBAR PUNCTURE. (96) (*Einige Indikationen und Kontraindikationen der Lumbal-punktion.*) CURSCHMANN, *D. med. Wchschr.*, Nr. 39, 1910, S. 1798.

Indications.

1. IN nearly all forms of meningitis, lumbar puncture is of great value as a symptomatic treatment and very often as an aid to recovery. For an exact differential diagnosis between the various forms of meningitis, and for the subsequent treatment of the serous and meningococcal forms, it is of paramount importance. Fibrino-purulent meningitis secondary to pneumonia, influenza, and erysipelas recover after puncture. The occurrence of metastatic meningitis in the course of an infectious disease indicates lumbar puncture.

2. Cases of "meningismus" — for purposes of diagnosis and treatment.

3. Three cases of recovery from tuberculosis have been described, and the author maintains that recovery was brought about by repeated lumbar puncture—one of the cases was sub-

jected to twenty-four punctures. But these were probably cases of spontaneous cure, and again, it must be remembered that many cases show remissions. Lumbar puncture, however, is a useful symptomatic treatment.

4. Cases of affection of the pachymeninges, especially pachymeningitis hæmorrhagica interna, indicate lumbar puncture as a therapeutic measure. Two out of three of the author's cases recovered; one of these is given in some detail together with the findings in the cerebro-spinal fluid.

5. Traumatic epi- and sub-dural hæmorrhages from the larger vessels, with or without fracture of the skull, and especially hæmorrhage from the middle meningeal (this latter naturally calls for surgical treatment in addition). In cases of fracture, especially of the base of the skull, with small hæmatoma and secondary meningitic irritation, lumbar puncture is of both diagnostic and therapeutic value. The author quotes two such cases. It may be desirable to continue the puncturing after the fluid has ceased to show signs of blood. The author suggests that many cases which are diagnosed as purely functional sequelæ of head injuries would be shown by lumbar puncture to have organic changes.

6. Chronic auto-intoxications, viz., uræmia, eclampsia, coma in severe liver diseases.

Contra-indications and Dangers.

1. If the lumbar puncture is performed with the patient in the recumbent posture, any ill effects are probably merely psychic.

2. Hysteria has been given as a contra-indication, and the author had one case in which puncture was followed by pain in the back, etc.; but such cases are rare, and often the puncture has a suggestive therapeutical influence.

3. Infection is the danger to be feared least.

4. Cases of hæmorrhage into and of tumours in the posterior cranial fossa, and especially of tumours of the cerebellum. So many disastrous cases have been reported that the dangers outweigh the advantages. The author details such a case, and discusses the mechanism whereby death is brought about. In this connection, however, it must be remembered that cases of so-called pseudo-tumour cerebri (subacute or chronic hydrocephalus and meningitis serosa) are probably not very rare, and these should be treated by lumbar puncture; hence a difficulty is introduced.

F. ESMOND REYNOLDS.

**CHANGES IN THE CEREBRO-SPINAL FLUID AFTER INTRA-
(97) SPINAL INJECTIONS OF HUMAN SERUM.** (Modi-

fications dans la composition du liquide céphalo-rachidien à la suite des injections intra-rachidiennes de sérum humain.)

ARNOLD NETTER and A. GENDRON, *Comp. Rend. Hebdom. des Séances de la Soc. de Biol.*, Paris, Nov. 25, 1910.

THE authors give results of cases of poliomyelitis in children treated by injections of human serum into the sub-arachnoid space. The cases were treated as soon as possible after the onset of the disease—ninth, sixth, and third days respectively in three cases recorded. First 12 to 25 c.c. of cerebro-spinal fluid was withdrawn, and then about a third of that amount of human serum, recently separated, was injected. On the next day another puncture was made, and about 15 c.c. of cerebro-spinal fluid withdrawn, and again a third of that amount of human serum injected. A third withdrawal and injection is noted in one case. The fluid was examined on each occasion. At first puncture it was clear and slightly albuminous, and contained from ten to forty-five cells—lymphocytes—per cmm. On withdrawal next day fluid was opalescent, and contained much more albumen, and cells were raised from 10 or 45 to 80 or 300 respectively, and were chiefly polymorphs, with some lymphocytes and a few large mononuclear cells. On third day in one the albumen had lessened, and the cells, especially the polymorphs, diminished.

This reaction was never accompanied by such constitutional symptoms, fever, pain, etc., as may occur after a similar injection of horse serum.

A. MURRAY DRENNAN.

**THE WASSERMANN REACTION IN PSYCHIATRY AND NEUR-
(98) OLOGY, WITH ESPECIAL REFERENCE TO PARALYSIS, TABES, AND LUES CEREBRI OR CEREBRO-SPINALIS.**

(Die Wassermann-Reaktion in der Psychiatrie und Neurologie mit besonderer Berücksichtigung der Paralyse, Tabes und Lues cerebri bzw. cerebrospinalis.) WASSERMAYER and BERING, *Arch. f. Psychiat.*, Bd. 47, H. 2, 1910, S. 822.

IN the authors' series of cases of dementia paralytica, a positive finding was given by the Wassermann reaction as applied to the blood in 45 cases; to 26 of these the test was applied to the cerebro-spinal fluid, with 14 positive results. In 13 further cases the test was applied to the blood at varying intervals; in some of these cases it was found that, whereas at first the result was negative, at a subsequent investigation a positive finding was given. Of these 13 cases, 5 failed ever to give a positive result.

An analogous finding was given by certain of the cases when the test was applied at varying intervals to the cerebro-spinal fluid. In no case was a negative finding given by the blood and a positive finding by the cerebro-spinal fluid. In all, 58 cases of dementia paralytica were investigated.

In 7 cases of tabes dorsalis the Wassermann reaction as applied to the blood gave 4 positive and 3 negative findings. The cerebro-spinal fluid of 3 of the 7 cases was subjected to the reaction, and 1 gave positive, 2 negative results.

Of 7 cases of lues cerebri, the Wassermann reaction as applied to the blood gave 6 positive and 1 negative results. With the cerebro-spinal fluids of 5 of these cases, 1 positive and 4 negative results were obtained. Of 23 various non-luetic diseases of the nervous system, 1 case of progressive spinal muscular atrophy gave a doubtful reaction with the blood and a positive reaction with the cerebro-spinal fluid; all the other cases gave negative findings.

The authors give tables comparing the results obtained by subjecting the blood and the cerebro-spinal fluid to the Wassermann reaction and the further investigation of the cerebro-spinal fluid as regards the pressure, the Nissl test, the Guillant-Parant test, the Nonne-Apelt (Phase I.) test, and lymphocytosis.

The authors think that the Wassermann reaction is of prognostic worth and of value as indicating the effects of treatment. They conclude their paper by briefly reiterating the oft-quoted relationship between the Wassermann reaction and the diseases investigated, and by giving the deductions that may be drawn from the findings of the reaction.

F. ESMOND REYNOLDS.

REMARKS ON THE COMPARATIVE DIAGNOSTIC VALUE OF
 (99) **THE NOGUCHI BUTYRIC ACID REACTION AND CYTOLOGICAL EXAMINATION OF THE CEREbro-SPINAL FLUID.** W. H. HOUGH (Washington, D.C.), *Bulletin*, No. 2, 1910.

THE most delicate and reliable test of increased globulin content is the Noguchi butyric acid reaction. But cytological examination is more useful, unless confined to enumeration of total cells or done with imperfect technique. With the Alzheimer method much more delicate diagnosis is reached by cytological than by chemical study. It is the best present means of anticipating the anatomical evidence which permits of a diagnosis of paresis, for in this disease the meninges are always involved, as Nageotte long since showed. It is in differential counts that the superiority of Alzheimer's method is shown, for in total counts it is inaccurate, that of Fuchs and Rosenthal being the best. Hough uses, how-

ever, a counting chamber which contains 4 cubic millimetres. Blood contaminations are rejected from the statistics. Hough considers the butyric acid test of little practical use unless aided by the Wassermann test and cytological examination, for it is often positive in arterio-sclerotic and senile psychoses as well as in some cases of dementia præcox of long standing, besides in non-inflammatory cases in which the nerve structures have disintegrated post-mortem.

Attempts to compare the proportion of different cellular elements found in the cerebro-spinal fluid with those found in the brain and meninges in the same patient after death have been unsatisfactory, because of the difficulty of the latter count, and because the proportion varied greatly in different vessels of the cortex. But the proportion of plasma cells round the vessels was always very much greater than in the fluid; and in two cases the meninges were only slightly inflamed. In 109 cases a cytological study of the cerebro-spinal fluid was made.

In all, 160 cases had the serum examined by the Wassermann test, 62 being diagnosed as paresis and 40 as dementia præcox. Of the former all gave positive reactions, 2 of them only faintly. The other positive reactions were cerebral syphilis 7, all under treatment; tabes 1, dementia præcox 9, 4 of which showed evidence of syphilis, arterio-sclerosis 1 out of 9 cases, epilepsy a faint reaction in 1 out of 7 cases, 2 of primary and secondary syphilis, 4 in depressed and excited states, and 1 slight reaction in an undiagnosed case. Of 19 paretics who since died, the diagnosis was confirmed in all but 1, which proved to be an unusual type of cerebral syphilis. With the butyric acid test 86 cases were examined. 15 of these were dementia præcox, and 7 of them gave a positive reaction, of whom only 2 reacted with the Wassermann method, but both were syphilitic, and none of them showed plasma cells in the fluid. Several other cases gave positive reactions without indications of syphilis; so Hough concludes that the proper cytological study is a more accurate diagnostic method than the estimation of globulin.

A beautiful plate with fifty figures illustrates the article.

TOM A. WILLIAMS.

DIAGNOSTIC RESULTS FROM THE LUMBAR-PUNCTURE OF (100) 150, (190) CASES, WITH SPECIAL REFERENCE TO THE NONNE-APELT REACTION. (Diagnostische Ergebnisse aus den Lumbal-punktionen von 150 (190) Fällen mit besonderer Berücksichtigung der Nonne-Apeltschen Reaktion.) ASSMANN, D. *Ztschr. f. Nervenheilk.*, Bd. 40, H. 1-2, 1910, S. 131.

THE author gives in tabular form the results of examining the cerebro-spinal fluids of a series of cases (*a*) of nervous diseases non-luetic in origin; (*b*) of nervous diseases luetic in origin; (*c*) of isolated pupillitis—four cases. In the first group the findings as regards Phase I., cell-contents and albumen contents of the fluids are given; in the last two groups, in addition to the foregoing, are given the findings of the Wassermann reaction as applied to the blood sera and to the fluids.

From his observations the author concludes:—

1. Together with the other tests used in his examination, the Nonne-Apelt test is of paramount worth in differential diagnosis.

2. The Nonne-Apelt test is never given in pure functional psychoses, nor in marked or latent cases of syphilis without involvement of the central nervous system. It is always present in cases of general paralysis and of tabes dorsalis, and often, but by no means always, present in cerebro-spinal lues. The reaction is independent of the cell-contents of the cerebro-spinal fluid.

3. Very seldom in chronic, but frequently in acute non-luetic, diseases of the central nervous system the Nonne-Apelt test gives a positive finding. It is usually given in meningitis, and is far more sensitive than the Moritz-Rivalta reaction.

4. A slight but very important increase in the cells, and even a pleocytosis, can only be determined by means of the counting chamber. The normal number is 1 to 3; above 5 indicates disease.

5. The presence of a coagulable secretion in the cerebro-spinal fluid indicates diffuse changes in the meninges, and such a secretion is found in meningitis due to partially malignant tumours and in gummatous meningitis. Hitherto attention has been given to this only in the tuberculous and in the epidemic forms of meningitis.

6. In diffuse gummatous meningitis all the reactions, with the exception of the Wassermann reaction as applied to the cerebro-spinal fluid, gave strongly positive findings; in pure arterial cases, or at the beginning of the illness, the reactions gave mostly negative results. Generally speaking there were more positive findings given by Phase I. and by pleocytosis; the Wassermann reaction as applied to the fluid gave positive findings in about half the cases; where applied to the blood-serum, almost without

exception were the findings positive. Although in a few cases of lues cerebri the cerebro-spinal fluid may be normal as regards the tests, and consequently all forms of luetic infection cannot be excluded by a negative finding, yet a negative result excludes the metasymphilitic diseases, general paralysis and tabes dorsalis.

F. ESMOND REYNOLDS.

**EXPERIENCE OF THE EHRLICH-HATA PREPARATION IN
(101) VISCERAL AND NEUROLOGICAL CASES. (Erfahrungen
über das Ehrlich-Hata'sche Präparat in internen und neuro-
logischen Fällen.) HERMAN SCHLESINGER, *Wien. med. Woch.*,
1910, Nr. 46, p. 2750.**

THE author opened a discussion on "606," in which he gave his experience in twenty-four cases which he had treated by this method. The seat of the injection was the interscapular region.

The cases treated included syphilitic endarteritis, tabes and taboparesis, acute syphilitic ataxia, hepatic, laryngeal and oral syphilis, as well as osteoarthritis with fever, and syphilitic joint disease. A very acute instance of the last-mentioned type yielded the best result he obtained.

Cases of meningo-myelitis of specific origin yielded more or less satisfactory results; three of the cases might be described as being much improved.

The question of the superiority of "606" over the old methods of mercury and iodide is considered. The author thinks that both have their uses, and quotes an instance of acute syphilitic ataxia which was made much worse by "606," and subsequently improved very considerably under mercury and iodide. The secondary and injurious effects of the injection are considered. These are, as a rule, infrequent and not serious, provided care be taken to avoid treating unsuitable cases. There are certain definite contra-indications, such as syphilitic aortic disease, myocardiac degeneration, cases of heart-block, aneurysm, nephritis, leukæmia, and diabetes. In advanced cases of tabes or general paralysis treatment by "606" is useless.

Complications which may follow injection are:—

- (i) *Vascular System*.—Rapid pulse, fall in blood pressure, arrhythmia, heart-block.
- (ii) *Urinary System*.—Albuminuria, casts (hyaline or granular), hæmaturia.
- (iii) *Alimentary Tract*.—Loss of appetite, vomiting, diarrhoea.
- (iv) *General*.—Some degree of fever, occasional macular cutaneous eruption.

The author regards the preparation as having a definite value in cases of syphilis of the central nervous system, and thinks that such risks as are attendant on its exhibition are worth running.

C. M. HINDS HOWELL.

COMPARATIVE TOXICITY OF SALTS OF MERCURY, OF (102) HECTINE, AND OF "606" FOR THE NERVOUS SYSTEM.

JEAN CAMUS, *Compt. rend. de la Soc. de Biol.*, Dec. 9, 1910, p. 508.

EXPERIMENTS on animals show that the bichloride and biniodide of mercury in weak solution are much more rapidly and intensely toxic than hectine or "606" in even large doses. The two latter substances are of about equal toxicity. There does not appear to be with weak solutions of mercuric salts that remarkable period of incubation which there is with similar doses of lead salts. The author considers all these substances too risky to introduce, even in small doses, into the spinal canal of man.

J. H. HARVEY PIRIE.

PSYCHIATRY.

FANATICISM — SUPERSTITION — DELUSION. (Fanatismus—
(103) Aberglaube—Wahnvorstellung.) HORSTMANN (of Treptow),
Ztsch. f. d. ges. Psych., Bd. 1, Ht. 2.

THE author discusses the function of a religious creed in relation to the personality of the individual; he shows in what respects the fanatic resembles the querulant, and how sentimentality in religion often indicates a constitutional defect. He refers to certain cases in which delusions of religious content were closely related to the sexuality of the patient. He gives briefly the case of a patient in whom the ideas partook rather of the nature of sectarian fanaticism than of paranoia.

C. MACFIE CAMPBELL.

ON THE PSYCHOSES OF EXHAUSTION. (Sulle psicosi da esauri-
(104) mento.) GUIDO RUATA, *Ann. di Freniat.*, Vol. 20, f. 2, 1910.

UNDER this title the author considers cases of amentia, classing them as a group of mental diseases characterised by a favourable prognosis, dissociation and incoherence of all forms of mental activity, and which occur in predisposed individuals from the stress of various exhausting influences.

He considers that short spells of "delirium of collapse," together with the more typical forms of amentia, may all be heaped together under the category of psychoses of exhaustion. From this class must be sharply divided infective psychoses and acute delirium. The influence of nervous exhaustion as a cause of the group of psychoses under consideration may be said to receive additional confirmation from the statistics given as to the case incidence during puerperium, and in nursing mothers who are exposed to physical fatigues. It is specially in this group of psychoses that improvement of the physical environment is likely to prove prophylactic.

F. GOLLA.

**A CLINICAL STATISTICAL STUDY ON THE INCIDENCE OF
(105) PARALYTIC ATTACKS DURING THE COURSE OF
GENERAL PARALYSIS.** (Studio clinico-statistico sugli
attacchi paralitici nella paralisi generale progressiva.) GIUSEPPE
MARGARIA, *Ann. di Freniat.*, Vol. 20, f. 2.

FROM the statistics tabulated the following conclusions are drawn :
—Death occurs from apoplectiform ictus in 55 per cent. of the cases that suffer from apoplectiform attacks, and more frequently in man, 56 per cent., than in woman, 52 per cent.

Death occurs during epileptic attacks in 56 per cent. of the cases that are subject to epileptiform attacks, and more frequently in man, 64 per cent., than in woman, 41 per cent.

F. GOLLA.

**THE CLINICAL ASPECTS OF JUVENILE GENERAL PARA-
(106) LYSIS (WITH AN ACCOUNT OF A CASE TREATED
WITH "606," AND OBSERVATIONS ON PROPHYLAXIS).**
J. ABRAHAM, *Lancet*, Dec. 31, 1910, p. 1877.

AN account is here given of a high-grade imbecile of 16, who was under asylum observation for three years with no signs of syphilis, although during this period his mother was admitted to the asylum as a general paralytic. He then suddenly developed a temperature of 102° and had retention of urine. This condition lasted for four days, and was succeeded by a number of typical epileptiform attacks. His blood serum, when tested, showed a well-marked Wassermann reaction. Optic atrophy was present. A right-sided paresis which appeared gradually improved during the next month, but there was occasional loss of control of both bladder and rectum. He was given 0.3 gram of "606," injected in solution in the buttock. Re-examined four weeks later, there

was practically no improvement in his condition. This is in keeping with the majority of clinical reports recorded in the adult type and in tabes.

J. H. HARVEY PIRIE.

**ON THE DIAGNOSTIC IMPORTANCE OF THE CEREBRO-SPINAL
(107) FLUID IN PSYCHIATRY.** (Beiträge zur diagnostischen Verwertung der cerebrospinalen Flüssigkeit in der Psychiatrie.)

H. RICHTER, *Ztsch. f. d. ges. Neurol. u. Psych.*, Bd. 1, Ht. 3.

THE author reports the result of the examination of the cerebro-spinal fluid of 250 cases of insanity to determine the globulin content. One case out of 117 cases of general paralysis gave a negative reaction. Out of 133 non-paralytic cases, 9 gave a strongly positive, 29 a weakly positive reaction; of the 9 strongly positive, 8 were syphilitic; of the 29 weakly positive cases, 16 were syphilitic. A weakly positive reaction points rather to lues cerebri than to general paralysis. The other cases with positive reaction were cases of organic psychosis; therefore, the test is of great importance in differentiating functional from organic psychoses.

C. MACFIE CAMPBELL.

Reviews

**KOMPENDIUM DER TOPISCHEN GEHIRN- UND RÜCKEN
MARKSDIAGNOSTIK.** ROBERT BING, Privatdozent für Neurologie an der Universität Basel, Sn. 191, mit 70 Abbildungen. Urban & Schwarzenberg, Berlin und Wien, 1909. M. 6.

THIS book consists of two sections. In the first section the local diagnosis of spinal cord lesions is considered in relation to the transverse area and the level. The second section is subdivided into three main parts, the first and second dealing with local lesions in the region of the brain stem and cerebellum, the third with lesions of the cerebrum, basal ganglia and hypophysis. The subject is treated from a somewhat unusual standpoint, and a feature of the work is the lucidity of many of the diagrammatic representations.

EDWIN BRAMWELL.

DIE SYPHILISBEHANDLUNG MIT DEM EHRLICH-HATA'SCHEN MITTEL (DIOXYDIAMIDOARSENOBENZOL). J. BRESLER.
Halle: Carl Marhold, 1910. M. 1.

THIS pamphlet gives a short summary of all the more important papers which have appeared on the use of "606," and as the author is the editor of the *Psychiatrisch-Neurologischen Wochenschrift*, the special interest of the treatment of syphilis from the neurologist's and psychiatrist's point of view is specially kept in mind. The date is up to July 1910 (in the first edition).

J. H. HARVEY PIRIE.

THE TREATMENT OF SYPHILIS BY THE EHRLICH-HATA REMEDY "606." J. BRESLER. Translated by M. D. Eder.
2nd Edition. London: Rebman Ltd. Pp. 122. Price 2s. 6d.

THIS little work contains a collection of observations on "606" published in various periodicals up to the end of August of last year, with an appendix by the translator carrying the work on in chronological order up to the beginning of October. The work is purely a compilation, the reader being left to form his own judgment. In the translator's preface it is noted that at the end of October Professor Ehrlich strongly recommends the intravenous as the routine method, and that, whereas primary affections should receive 0.5 grm., syphilitic diseases of the central nervous system—to be treated with the greatest caution—should receive 0.2 to 0.4 grm. intravenously. It will undoubtedly be found a useful guide to various modes of employment of the remedy and to contra-indications and for comparison of results, in addition to being a good bibliographical guide.

J. H. HARVEY PIRIE.

THREE CONTRIBUTIONS TO THE SEXUAL THEORY. Professor FREUD. Being No. 7 of the Nervous and Mental Disease Monographs. New York, 1910. Price \$2.

THIS is a translation of Freud's somewhat famous "Three Essays," by Dr Brill, and we may say to commence with that the translation of a difficult work has been exceedingly well done. These three essays, which form a unified whole, are individually concerned with sexual aberrations, infantile sexuality and the transformation of puberty. Professor Freud has established on a firm basis the thesis that psychoneurotic illnesses never occur with a perfectly normal sexual life. Other emotions contribute to the result, but some abnormality of the sexual life is always present as the cause of especially insistent emotions and repressions. It has been objected to the psycho-analytic method of investigating these neuroses with a view to re-educating and curing the patient,

that all the "sexuality" which Freud finds is put there or that he exploits the sexual experiences of the patient and nothing more. But this is not so, and a study of these papers should go far to convince an open-minded observer that the "civilisation" of a race or an individual largely consists in the "sublimation" of infantile instincts, and especially certain portions of the sexual instinct. Hysteria and other psychoneuroses result from mal-developments of these attempts at sublimation; hence the necessity for digging back even into childhood for the repressed and half-forgotten emotions, interests and motives, sexual and other, of early years, to see where the patient first "got off the rails." Without thus strongly enlisting their interest to get to know themselves they cannot hope for re-development on any more stable lines than before.

J. H. HARVEY PIRIE.

BOOKS AND PAMPHLETS RECEIVED.

Vernon Briggs. "The Care of Cases of Acute Insanity. Should Delirium Tremens be Classed with the Insane?" (*New England Med. Monthly*, Aug. 1910).

Sigmund Freud. "Three Contributions to the Sexual Theory." Translation by A. A. Brill. Nervous and Mental Disease Monograph Series, No. 7. New York, 1910.

Bresler. "The Treatment of Syphilis by the Ehrlich-Hata Remedy—'606.'" London: Rebman Ltd., 1910. 2s. 6d.

W. B. Warrington. "Note on Tuberculous Meningitis" (*Lancet*, Dec. 17, 1910).

Medical Officer, Jan. 7, 1911, with Bacteriological Supplement.

Winquist. "Undersökningar af cerebrospinalvätskan vid progressiv paralyse." Helsingfors, 1910.

Grace Helen Kent and A. J. Rosanoff. "A Study of Association in Insanity" (*Amer. Journ. Insan.*, Nos. 1 and 2, 1910).

Gustaf Bergmark. "Bidrag till de Cerebrala Förämningarnas Symptomatologi." Uppsala: Almqvist & Wiksell.

"Klinik für psychische und nervöse Krankheiten," Bd. v., H. 4, 1910, M. 3.

"Anales de Psicología. Trabajos del año, 1909," Vol. i. Buenos Aires: Etchepareborda, 1910.

Monakow. "Aufbau und Lokalisation der Bewegungen beim Menschen." Leipzig: J. A. Barth, 1910. M. 1.

British Journal of Inebriety, Jan. 1911.

Bergmark. "Om intrakutan tyfoiddiagnos." (Upsala Läkaref-Förh Bd. xv.)

Bergmark. "Cerebral Monoplegia, with Special Reference to Sensation and to Spastic Phenomena" (*Brain*, 1910).

Review of Neurology and Psychiatry

Original Articles

RUPTURED BASILAR ANEURISM.

By EDWIN MATTHEW, M.D., F.R.C.P.E.,

AND

J. H. HARVEY PIRIE, M.D., F.R.C.P.E.,

ON the 20th of January J. D. was admitted to Leith Hospital in an unconscious condition. Patient had been sitting at the railway station when he suddenly dropped from his seat unconscious. He was quite unconscious on admission and lay flaccid. His breathing was stertorous, both cheeks being puffed out during expiration. He was somewhat cyanosed. His pulse was rather slow, 62 per minute, and regular. The temperature was sub-normal. In about two hours consciousness began to return, patient groaning and throwing his limbs about in an uneasy manner. In about two and a half hours after admission he spoke quite sensibly and was able to give an account of his movements previous to the attack. He woke up quite conscious in other two hours and complained of very severe frontal headache. The heart and lungs appeared quite healthy; and the urine contained a considerable quantity of albumen.

On the 21st, 22nd and 23rd of January he complained of intense pain over the occipital region and also some pain in the lumbar region. On the 24th of January in the afternoon he

had his second attack of unconsciousness. The nurse in the ward suddenly heard loud snoring-breathing, and on proceeding to the bed he was found quite unconscious. His face was congested, his breathing was stertorous, and he lay quite flaccid. The conjunctival reflex was absent in each eye, the pupils were small and reacted very sluggishly to light. The knee reflexes were absent. The whole period of unconsciousness extended to two hours, and, as in the previous attack, consciousness returned slowly, the breathing gradually becoming quieter. He was drowsy and stupid for an hour, but in three hours from the beginning of the attack was quite sensible, and sat up.

During the period of absolute unconsciousness the blood pressure rose to 200 mm. Hg. As he began to regain consciousness it fell to 150 mm. Hg, and at the end of the attack was 135 mm. Hg.

On the 25th the pain in the occipital region and in the back had increased, the erector spinæ in the lumbar region being contracted and standing out distinctly.

Lumbar puncture was performed and a small quantity of blood-stained fluid obtained.

On the evening of the 25th he had his third unconscious attack, which terminated fatally. A few minutes before the attack he was talking quite freely, complaining bitterly of the pain in his neck. Suddenly loud stertorous breathing was heard and he was seen to be unconscious. In about fifteen minutes he died. His pulse remained excellent during all this time, but his breathing was peculiar. The stertorous character disappeared. He would stop breathing for about ten to fifteen seconds and then make a deep crowing inspiration. This was repeated many times in the next ten minutes. At the end of fifteen minutes he gave one of these crowing inspirations, and then ceased to breathe. His pulse continued to beat, and beat strongly for more than a minute after the breathing stopped. His face rapidly became very dusky and dark, and he died asphyxiated.

Post-mortem Report by Dr Harvey Pirie.

There was nothing particular to note in the organs of the thorax and abdomen. There was a slight early atheroma in the cusps of both mitral and aortic valves and the first part of the

aorta. Both lungs were congested and œdematous. The kidneys were also congested.

Brain.—On removing the skull cap and dura the convolutions on the cortex of both hemispheres are seen to be flattened, the veins are engorged, and there is also marked injection of the capillaries of the pia. At the base there is a large amount of recent blood clot in the sub-arachnoid space extending from the optic chiasma backwards to the medulla, but especially over the pons and in the cerebello-pontine angles. The foramen of Majendie is clear. On gently washing off the blood clot there is seen a small aneurism at the anterior end of the basilar artery from which the blood has apparently come, though the actual point of rupture cannot be made out. The aneurism is like a truncated cone in shape, 13 mm. long, 7 mm. in diameter at its anterior end, tapering to 4 mm. at its posterior. The dilatation is rather more on the left side of the artery, and affects chiefly the ventral aspect of the vessel. At the anterior end of the aneurism the two posterior cerebral arteries branch off, and the superior cerebellar arteries arise within the aneurismal area. These vessels are healthy. On section of the brain the ventricles are distended with blood-stained fluid.

Microscopical Examination.

Sections across the aneurismal dilatation show that the artery here has been the seat of an advanced endarteritis proliferans, affecting the whole periphery of the vessel, the ventral aspect, however, more than the dorsal.

At the anterior end, where the change is most marked, the whole wall appears to consist of concentric laminæ of fibrous tissue, resulting from the proliferation of the media, the internal elastic laminæ and muscular coat having disappeared altogether. The lumen of the vessel, though considerably encroached upon, is not obliterated, and the change appears a strictly localised one, the posterior cerebral vessels, a slight distance in front of the aneurism, being quite healthy, as are the superior cerebellar arteries beyond their origin within the affected area. There is no evidence that the changes are the result of a primary thrombosis. They more closely resemble a syphilitic proliferative

endarteritis, although there is no other definite evidence of syphilis. Section of the brain showed nowhere areas of softening such as might result from the blood supply being interfered with. A considerable number of red blood cells lie within the meshes of the pia and in the adventitial lymph spaces of the vessels penetrating the pons. In the pia covering the ventral aspect of the pons, in the adventitia of the vessels entering from that side, and also to some extent round the vessels in the floor of the fourth ventricle, there is considerable infiltration by small round mononuclear cells resembling small lymphocytes, indicating a degree of irritation for some time, probably the result of blood soaking through the aneurismal wall before the final rupture.

The case is interesting clinically from the sequence of the symptoms. An apparently healthy man is seized with unconsciousness, from which he recovers completely in a few hours and with only severe headache remaining. For three days he remains quite well, though with increasing occipital headache and lumbar pain, and on the fourth day has a second attack of unconsciousness, from which he also recovers completely in three hours. On the fifth day he has a third fatal attack of unconsciousness. The aneurism had evidently burst through a small opening, and the pressure of the effused blood had resulted in unconsciousness. To account for the recovery from the first and second attacks one must suppose that the effused blood gradually spread itself out under the membranes, and the relief of the primary pressure resulted in the recovery of consciousness. The third attack was fatal from direct pressure on the medulla affecting the respiratory centre, which became paralysed.

THE MUSCLE SPINDLES IN PSEUDO-HYPERTROPHIC PARALYSIS.

By A. NINIAN BRUCE, M.B., Ch.B., D.Sc.

THE case of pseudo-hypertrophic paralysis about to be recorded was very typical of this condition, the muscles showing an advanced degree of atrophy and fatty infiltration. It therefore

MUSCLE SPINDLES IN MUSCULAR DYSTROPHY 111

seemed to me to be a case particularly well adapted for examination of the muscle spindles.

The muscle spindles were first definitely described in 1860 by Weismann (1). For a considerable time after this their significance was not understood. In 1889 v. Kölliker (2) pointed out that the most contradictory views prevailed in regard to their functional significance, some writers believing them to be sensory structures (Kerschner), others declaring them to be pathological, whilst v. Kölliker himself regarded them as stages in the development of normal muscle fibres. Ruffini (3), in 1892, concluded from a histological study of their nerve-endings that the muscle spindles were special nerve-organs entrusted with some peculiar sensorial function. In 1894 Sherrington (4) made a thorough investigation of these structures. He found that in muscles in which all the motor fibres had undergone complete degeneration after section of the motor nerve the muscle spindles showed no sign whatever of degeneration. He traced the nerves to these spindles from the sensory roots. Further, he found in a cat, in which the sciatic nerve had been divided one hundred and fifty days previously, that the muscle fibres were completely degenerated, but that in regard to the muscle spindles themselves, although the nerve fibres passing to them were degenerated, the intrafusal muscles were normal, as if their nutrition were apparently independent of both afferent and efferent fibres.

The condition of the muscle spindles in disease has not been frequently investigated. Batten (5), in 1897, studied the muscle spindles under various pathological conditions. He described one case of myopathy (Leyden form) in which he found that the muscle spindles had remained absolutely unaltered, and that their nerve supply was apparently unaffected. Grünbaum (6), in the same year, investigated the muscle spindles in a typical case of pseudo-hypertrophic paralysis. He found the ordinary changes present in the striped muscle, but the muscle spindles were for the most part unaffected. Spiller (7), in 1897, did not succeed in finding any alteration in the condition of the muscle spindles in a case of muscular dystrophy. Gordon Holmes (8), in 1908, found the muscle spindles all intact in a case of muscular dystrophy.

In the following case the patient was a boy aged 15 years.

He was admitted to Professor Greenfield's ward in the Royal Infirmary, Edinburgh, suffering from pneumonia of four days' duration. The family history is interesting, as the patient had had a brother, two years older than himself, who suffered from the same condition, and an uncle who had apparently developed it at a later stage of life. His parents stated that the condition was first noticed at the age of seven, when it appeared to come on gradually. There was marked scoliosis, with prominence of the posterior aspect of the left side of the chest, of the left lower ribs and lumbar region, and corresponding hollowing on the right side. The chest was flattened at its upper part, and the lower end of the sternum and intercostal cartilages protruded. There was distinct grooving of the costal cartilages. The calf muscles in the left leg showed considerable hypertrophy, which was stated by the patient's parents to have been even more marked at an earlier period.

After death the muscles were preserved in 10 per cent. formalin, and subsequently transferred to gum and cut by the frozen method. They were stained with hæmatoxylin and Sudan iii, and with hæmatoxylin and eosin. Examination of the muscles showed a very considerable degree of atrophy. The pectoral muscles were greatly atrophied, being replaced by fibrous tissue infiltrated with fat. The muscles of the back also showed an advanced degree of atrophy and fatty infiltration, not, however, quite so marked as in the pectoral muscles. The muscles of the arm and forearm were almost entirely replaced by fat. Those of the legs showed a similar condition, the degree of fatty infiltration in the gastrocnemii being particularly well-marked. The intercostal muscles and the diaphragm had also undergone fatty infiltration, but showed this to a less degree than any of the other muscles, the diaphragm being least of all affected. The cardiac muscle fibres were pale in colour and showed very slight fatty degeneration, otherwise no change of note.

The striped muscle fibres, on microscopical examination, showed the proliferation of the sarcolemma nuclei, with atrophied, normal, and hypertrophied fibres, central nuclei being often present, and considerable fatty infiltration, which is usually found in this condition; and an examination of the spinal cord showed only slight atrophic changes in the motor nerve cells of the anterior cornua, such as would be compatible with a secondary

atrophy, arising from the very advanced degree of muscular atrophy which is to be regarded as the primary lesion. The results were thus in agreement with those described by Gordon Holmes (8).

The examination of the muscles with regard to the muscle spindles was carried out very carefully and systematically. It becomes a comparatively simple matter to discover the presence of muscle spindles in a muscle in which such an advanced degree of atrophy of the striped muscle fibres has taken place, as in this case. I, however, failed entirely to find any muscle spindles in many of the muscles, but they were present in large numbers in the biceps, where they could be examined with ease. In every case the muscle fibres of the spindles appeared to be in a typically healthy condition. There was no atrophy of their fibres and no fatty infiltration. In two instances in which small globules of fat appeared to be present I had no difficulty in determining that these had merely been mechanically carried into this position from the surrounding tissue, and that they did not represent a fatty degeneration or infiltration of the spindles themselves. The fibres themselves exhibit the usual variations in diameter; there was no excessive proliferation of their nuclei, and the sheath of the bundle was not thickened.

Careful examination of the muscular part of the diaphragm failed to show the presence of any muscle spindles. In the muscles of the leg, where I was able to find muscle spindles, these were in a typical, normal condition, although the striped muscle fibres showed a very marked degree of atrophy and fatty infiltration. In every muscle in which muscle spindles could be discovered they appeared to be quite normal, and I was unable to find any evidence of the existence of degenerated muscle spindles in any of the sections in this case.

In pseudo-hypertrophic paralysis, therefore, the striped muscle fibres exhibit the usual changes characteristic of the muscular dystrophies. The non-striped muscle showed no corresponding changes. The muscle spindles are unaffected, and the changes in the central nervous system are of the nature of an atrophy which is probably secondary to those changes in the striped muscle fibres.

This paper is enabled to be published through the kindness

114 MUSCLE SPINDLES IN MUSCULAR DYSTROPHY

of Professor Greenfield, under whose charge the patient remained during his residence in the Royal Infirmary. For this permission I wish to record my most grateful thanks.

REFERENCES TO LITERATURE.

1. Weismann. *Arch. de Physiol.*, T. viii., 1896.
2. Kölliker. *Handbuch d. Gewebelehre*, Bd. 1, 1889.
3. Ruffini. *Rendiconto d. R. Accad. d. Lincei*, Rome, June 1892; *Arch. ital. de Biol.*, xviii.; *Anat. Anz.*, Nov. 1893.
4. Sherrington. *Journ. of Physiol.*, Vol. xvii., 1894.
5. Batten. *Brain*, 1897, p. 138.
6. Grünbaum. *Brain*, 1897, p. 365.
7. Spiller. *Journ. of Nerv. and Ment. Dis.*, Oct. 1897.
8. Gordon Holmes. *Rev. of Neurol. and Psychiat.*, Vol. vi., 1908, p. 137.

Abstracts

ANATOMY.

THE CARDIO-INHIBITORY NERVE FIBRES IN THE WOOD-
(108) **CHUCK.** SUTHERLAND SIMPSON and H. W. MAYES, *Proc. Soc. Exper. Biol.*, Vol. viii., No. 1, 1910.

IN the woodchuck (American marmot) the vagus nerve in the cervical part of its course consists of two or three distinct fasciculi which can be readily separated in the living anæsthetised animal without injury, and stimulated individually. On ligaturing and dividing each of these strands, and stimulating the peripheral and central ends respectively, one of them alone is found to contain cardio-inhibitory (efferent) fibres. This can be followed as a distinct fasciculus upwards to the superficial origin of the vagus, but in the lower part of the neck it appears to unite with the other bundles to form a common trunk and cannot be easily dissociated. Whether it contains afferent fibres also, or efferent fibres to organs other than the heart, has not yet been determined.

AUTHORS' ABSTRACT.

THE TRACT OF GOWERS. A. NINIAN BRUCE, *Quart. Journ.* (109) *Experiment. Physiol.*, Vol. iii., No. 4, 1910.

THIS investigation was undertaken in order to determine the origin and course of the fibres included in the term "tract of Gowers." This has long been a matter of uncertainty. It was found that a lesion in the lower thoracic segments involving the antero-lateral region of the cord alone caused an ascending degeneration of fibres in the tract of Gowers. These fibres, on being traced upwards by the Marchi method, were found to pass dorsalwards, to appear in considerable numbers in the tract of Flechsig, and to be distributed to the cerebellum *via* the restiform body, along with the other direct cerebellar tract fibres.

On examining the cells of the column of Clarke in a monkey in which the inferior cerebellar peduncle on one side had been completely destroyed, and in which the fibres of Gowers' bundle were uninjured, degeneration of these cells was found throughout the whole length of the column, with the exception of those situated at the lower end—*i.e.* in the first and second lumbar segments—and it was found that, in a lesion in the thoracic region involving the antero-lateral fibres only, degeneration of the cells at the lower end of Clarke's column took place.

Fibres were also traced as far up as the optic thalamus, substantia nigra, and both colliculi, from the lower antero-lateral region of the spinal cord, and it is therefore proposed that the term "tract of Gowers" should be held to include all these ascending antero-lateral fibres. The ventral cerebellar tract is thus to be regarded as forming merely a part of the tract of Gowers. We must therefore consider the dorsal and ventral cerebellar tracts as representing one tract, the fibres of which connect the fibres of Clarke's column to the cerebellum.

No physiological effects, such as ataxia or alterations of sensation, could be ascribed to lesions of the cerebellar tracts.

AUTHOR'S ABSTRACT.

CONCERNING THE SENSORY PATHS IN THE SPINAL CORD,
(110) **STUDIED PARTICULARLY IN CASES OF STAB-WOUND.**

(Ueber die Bahnen der Sensibilität im Rückenmarke, besonders nach den Fällen von Stichverletzung studiert. KARL PETRÉN, *Archiv f. Psychiat. u. Nervenkrankh.*, Bd. 47, H. 2, 1910, S. 495.

THE investigation of sensation in animals is a matter of extreme difficulty. Again, it does not follow that the arrangement of the sensory paths in the spinal cord is the same as in man. Hence it

is particularly to clinical observation, notably in cases of unilateral lesions of the spinal cord, that we must look for information regarding the paths of sensory conduction. Lesions limited to one side of the spinal cord are seldom encountered, and opportunities for anatomical corroboration are of extreme rarity, for either the patient recovers or the process is progressive, so that when the case is examined post-mortem the lesion is no longer strictly unilateral. This being so, most of our knowledge of sensory conduction in the spinal cord has been derived from a study of clinical cases in which there is reason for believing in the existence of a unilateral lesion, although no opportunity has been afforded of corroborating the inference by anatomical proof.

Petrén emphasises the special value of cases of stab-wound in this connection. He has collected ninety-four cases of stab-wound from the literature, and these he classes for present purposes into three groups.

Group 1.—Cases of motor paralysis limited to one side in which analgesia and thermanalgesia but no tactile anæsthesia were present in the contra-lateral limb (thirty-nine cases).

Group 2.—Cases in which the motor paralysis was unilateral, while sensation to pain, temperature, and touch were all defective on the contra-lateral side (twenty-four cases).

Group 3.—Cases in which all the three forms of sensation above-mentioned were interfered with on the side opposite to the injury, but in which at the time of injury, and it might be for months afterwards, there was more or less paresis of the contra-lateral limb in addition to the motor paralysis on the homolateral side (thirty-one cases).

Details of these ninety-four cases are given in tabular form in relation to the site of the stab-wound, the character of the crossed anæsthesia, the condition of the muscle sense, and the distribution of the motor paralysis.

Among the conclusions come to by the author from the data thereby afforded are the following:—The paths for conduction of pain and temperature sensation decussate and lie in the outer part of the opposite lateral column. Tactile impulses are conducted by two paths, the one in the posterior column of the same side, the other in the lateral column of the opposite side, very likely in the same situation as the fibres which conduct the other forms of sensation already referred to. These two paths appear to be so interchangeable that as a rule interference with one produces no distinguishable disturbance of tactile sensibility, although exceptions to this rule occur.

There are two paths connected with the muscle sense, both of them uncrossed, one on the posterior column, the other represented by the direct cerebellar tract. These tracts are so related

that interference with one produces no demonstrable disturbance of the muscle sense, *i.e.* the ability to recognise the direction of the smallest passive movement. EDWIN BRAMWELL.

ON THE RELATION OF THE SENSORY NERVE-ENDINGS TO

(111) **THE PROCESS OF INFLAMMATION.** (Über die Beziehung der sensiblen Nervenendigungen zum Entzündungsvorgang.)

A. NINIAN BRUCE, *Arch. f. experiment. Pathol. u. Pharmacol.*, Bd. 63, 1910, S. 424.

THIS paper is written to show that the vaso-dilatation which is one of the earliest signs of inflammation, when it occurs in a vascular area, is the result of a nervous reflex. The evidence upon which this is based is that this vaso-dilatation is not affected by total section of the cord or by division of the sensory nerve roots central to the posterior root ganglia. Section of the ophthalmic division of the fifth nerve peripheral to the Gasserian ganglion does not affect this vascular phenomenon, but if the nerve be divided and sufficient time allowed for the peripheral part of the nerve to degenerate, it will then be found that the vascular reaction to an irritant applied to the eye does not take place.

It was also found that as long as the eye could be kept completely insensitive by local anæsthetics, this vascular change did not occur. From these facts it was deduced that the posterior sensory fibres bifurcate at their peripheral terminations, one limb passing to end in a sensory end-organ in the skin, the other passing to the vessels. The reflex in question is apparently limited to the two limbs of this bifurcation, and is therefore an axon reflex similar to those described by Langley in the sympathetic system. We thus have an explanation of the fact that vascular changes may be peripheral or central in origin, and possibly also of Charcot's joints in tabes and of herpes zoster.

AUTHOR'S ABSTRACT.

ON THE LATENCY OF SENSORY NERVE ENDINGS TO

(112) **MECHANICAL STIMULATION.** W. A. JOLLY (Proc. Physiol. Soc.), *Journ. Physiol.*, Dec. 31, 1910, p. 14.

WHEN the skin of the hind limb in the decapitated cat is stimulated by pricking with needle points, an electrical variation can be recorded by the string galvanometer in the afferent nerve trunk. Non-polarisable electrodes are applied to the anterior crural nerve, and the skin is stimulated on the inner aspect of

the dorsum pedis or on the inner side of the thigh. The electrical variation follows the stimulation at a longer interval in the former than in the latter case in correspondence with the longer stretch of nerve to be traversed.

When nerve conduction time, calculated at the rate of 120 metres per second, is deducted from the latency of the galvanometric deflection, the latency of the nerve endings in the skin is found to be from 2.6 to 2.9 σ (thousandths of a second).

When the patellar tendon is struck in eliciting the knee jerk, a similar negative variation is obtained from the anterior crural nerve. This response in the nerve to the stretching of the muscle has a latency which has been found to average in five preparations 1.5 σ . Deducting 0.5 σ for nerve conduction, this leaves an average latency of 1 σ for the nerve endings. AUTHOR'S ABSTRACT.

THE TOPOGRAPHY OF THE SENSATION OF WARMTH. (Zur (113) *Topographie des Wärmesinnes.*) ELO and NIKULA, *Skand. Archiv of Physiol.*, Bd. 24, Hft. 2, 3, and 4, S. 226, 1910.

THE method of mapping out the skin areas sensitive to warmth adopted by the authors has been the determination of the threshold of sensation. The bulb of a thermometer surrounded by coils of insulated wire, through which a heating electrical current passes, is applied to the skin, and the person experimented upon states whether or not he feels a sensation of warmth, but gives no judgment as to its strength. As the warmed thermometer is itself used as the source of heat, the temperature can be read immediately.

The skin of the whole body, except parts covered with hair, has been tested, the parts usually clothed being exposed only for a short time and not allowed to become adapted, unclothed, to the temperature of the room, which is kept constant at 22° C.

The lowest threshold, 24° C., is found in a small area in the neck, of 1 cm. diameter, situated at the posterior border of the sternomastoid.

In the upper extremity the lowest threshold, 28° C., is found in a small area on the lateral aspect of the upper arm over the triceps, and around it lie, in more or less concentric arrangement, areas of higher threshold.

The arrangement is similar in the lower extremity. The lowest threshold, 30° C., is here found in a small area on the inner aspect of the thigh, which forms a centre around which areas with higher threshold are spread out.

The results obtained are not in accordance with those published by Alrutz. W. A. JOLLY.

DISTURBANCES OF CUTANEOUS SENSIBILITY IN RELATION
 (114) **TO ASTEREOGNOSIS AND ASYMBOLY.** (*Troubles des sensations superficielles dans leurs rapports avec l'astéréognosie et l'asymbolie.*) ALFRED GORDON, *Revue Neurologique*, Sept. 30, 1910, p. 301.

THREE cases are described in detail.

In the first case, touch, pain, and temperature sensibility were intact, but there was complete astereognosis ; in this case muscular sense, sense of pressure, sense of movement, localisation, were markedly impaired.

In the second case touch was defective, pain and temperature were normal. Sense of position and of movement was normal ; pressure sensibility was a little defective ; localisation was defective. Nevertheless the stereognostic sense was perfectly intact.

In the third case both cutaneous and deep sensibility was very considerably impaired, and astereognosis was complete.

S. A. K. WILSON.

LA FONCTION DU SOMMEIL. PHYSIOLOGIE—PSYCHOLOGIE

(115) —**PATHOLOGIE.** ALBERT SALMON (de Florence). Paris • Vigot Frères, 1910.

THIS is a thesis on the origin and mechanism of sleep, considered as a function of the ductless glands.

The two current views of the origin of sleep—

1. That it is caused by the accumulation of the products of metabolism, and
2. That it is of purely psychic origin,

are shown to be incomplete and contradictory, seeing that the first takes no account of the effect of psychic elements in causing sleep, and the second ignores the fact that a person may be overcome by sleep against his will.

He considers that sleep, being a function of the ductless glands, may be caused by a stimulation of these glands by accumulation in the blood of the products of metabolism, or by a psychic reflex. That such psychic stimulation is common in the body he proves by the analogy of the stomach, kidneys, skin, etc.

Of these glands, the pituitary has the most direct influence in causing sleep, and the diseases of this gland are closely related to the pathology of sleep. The thymus gland in children and the "glande hibernale" of mammals are also considered to be chiefly related to the function of sleep.

Great stress is laid on the rôle of the chromatophil Nissl granules of the nerve cells, which he has shown, by experimental work to be elaborated during sleep. These he considers as the nutriment of the nerve cell and its processes, and it is to preserve this substance from the toxic effects of the processes of metabolism that the pituitary secretions are elaborated. Toxic agents in the blood, if in small quantity, may stimulate the formation of the chromatophil granules, but in larger quantity they cause chromatolysis, and consequent insomnia, as in exhaustions, fevers, syphilis, etc.

The mechanism of sleep is the alteration of the chemical composition of the nerve cells, in the elaboration of chromatophil granules, so that it becomes a worse conductor of the impulses passing along the axon and dendrites.

The argument is largely based on analogy, but a large bibliography is quoted of authors from whom he draws facts and opinions.

J. G. GREENFIELD.

THE COMPARATIVE EFFECTS OF YOHIMBINE, PROTOVERATRINE AND VERATRINE UPON ISOLATED NERVE AND UPON ISOLATED MUSCLE. A. D. WALLER (Proc. Physiol. Soc.), *Journ. Physiol.*, Dec. 31, 1910, p. 11.

WHEN isolated frog's nerve is immersed in protoveratrine, the successive negative variations are of rapidly diminishing magnitude and remarkably prolonged, while after yohimbine the successive negative variations diminish without presenting any sign of permanent after-effect.

On isolated muscle protoveratrine is less active than yohimbine, the latter abolishing contractility sooner, with marked contracture.

Veratrine is more toxic to muscle than protoveratrine, but in the case of isolated nerve the reverse holds good.

Experiments carried out with Dr Tait on the excised sciatic nerves of frogs poisoned with protoveratrine and yohimbine respectively show that these drugs differ in their effect upon nerve.

W. A. JOLLY.

PSYCHOLOGY.**CONTRIBUTION TO SYMBOLISM IN EVERYDAY LIFE.**

(117) (*Beitrag zur Symbolik im Alltag.*) ERNEST JONES, *Zentralblatt für Psychoanalyse*, Dez. 1910, Heft 3, S. 96.

THE psycho-analysis is given of a "harmless" act performed unnoticed by a doctor in arranging his furniture. It proved to have been dictated by a series of unconscious mental processes, the analysis of which led to a highly significant buried part of his personality. The analysis is an illustration of how valuable psycho-analysis can be in tracing superficial mental processes to previously unknown sources, which determine the person's main motives and interests in life.

AUTHOR'S ABSTRACT.

PSYCHO-ANALYSIS AND EDUCATION. ERNEST JONES, *Journ. of Educational Psychol.*, Nov. 1910, p. 497.

THE penetrating investigations of Freud, Jung, and others, carried out by means of the psycho-analytic method, into the intimate mental life of early childhood have shown the great significance of various factors at this age in connection with the development both of the psycho-neuroses and of normal character. The factors in question are usually not merely ignored in education, but are unconsciously influenced in harmful ways. A clearer knowledge of them is indispensable for true education, and through this knowledge it is probably always possible to avert a later neurosis. The paper is not suitable for summarising.

AUTHOR'S ABSTRACT.

PATHOLOGY.**LESIONS OF THE CERVICAL SYMPATHETIC IN EXOPH-**

(119) **THALMIC GOITRE.** HORAND, *Revue Neurologique*, Oct. 15, 1910, p. 344.

IN a typical case of exophthalmic goitre the trunk of the right cervical sympathetic was as thick on cross section as the superior cervical ganglion itself; it was hard, stiff, and whitish, the normal cervical sympathetic being soft, supple, and greyish. The cells of the ganglion had to a great extent disappeared; some that were left exhibited karyolysis of the nucleus; other cells were strangled by invading connective tissue; at the periphery newly formed connective tissue was found associated with small-cell infiltration.

S. A. K. WILSON.

**CONTRIBUTION TO THE ANATOMY AND PATHOGENY OF
(120) SO-CALLED AGENESIS OF THE CORPUS CALLOSUM.**

LA SALLE ARCHAMBAULT, *Revue neurologique*, July 30, 1910, p. 57.

AN interesting resumé of a piece of work to be published *in extenso* elsewhere: the main points are that so-called agenesis of the corpus callosum may result from antenatal "ventriculitis," *i.e.* a meningo-ependymitis. Obliteration of the two frontal cornua by disease has prevented the necessary approximation of the hemispheric vesicles; this, with destruction of the periventricular callosal layers, is the solution of the "agenesis" problem. The sagittal mesial bundle, however, takes the place of the corpus callosum proper, except that it does not cross the middle line to join its fellow of the opposite side. S. A. K. WILSON.

**LESIONS OF THE CORD IN MENINGITIS. TINEL, *Revue Neuro-*
(121) *logique*, July 15, 1910, p. 1.**

ANY sort of meningitis tends to have an action on the nerve roots, and in particular the posterior roots, which is strictly comparable to the radicular lesions of tabes; this lesion consists in a localised degeneration of nerve fibres in contact with masses of leucocytes crowding the nerve sheath. These leucocytic accumulations are due to the permeability of the meningeal sheaths almost as far as the ganglion, the downward slope of the roots, and the circulation of the cerebro-spinal fluid. Probably the degeneration is one of contact with toxins, the vehicle of which is the leucocytes.

If the meningitis lasts a sufficiently long time, an ascending degeneration in the posterior columns will be found. In a case of cerebro-spinal meningitis of seventy days' duration, studied by the author, the condition found was a histological tabes, systematised in the usual way. Such cases are of interest and value, inasmuch as they serve to demonstrate the meningeal nature and radicular mechanism of tabes. It is interesting to note the difference between the slight root lesions where the roots are still covered by the sheath of Schwann and the severe lesions just as they enter the cord, the sheath having disappeared.

In cases of meningitis, further, marginal degeneration is not infrequent. It seems to be a primitive lesion of nerve fibres, of toxic origin, from the cerebro-spinal fluid (toxic imbibition).

S. A. K. WILSON.

CLINICAL NEUROLOGY.

THE RELATION BETWEEN ORGANIC AND FUNCTIONAL NERVOUS DISEASES. ERNEST JONES, *Dominion Med. Monthly*, Dec. 1910, p. 202.

THE author holds that properly speaking there is no such thing as a functional nervous disease, for the group of cases designated as such are truly organic (Parkinson's disease, chorea, etc.), while the other group are primarily not nervous diseases, but take their origin in deviations and erroneous functioning of certain biological instincts (psycho-neuroses).

The main thesis of the paper is that it is a cardinal error to base the diagnosis of a neurotic condition purely on exclusion. If, for instance, the diagnosis of hysteria is made to depend on the non-finding of definite signs of organic affection, then two kinds of mistake must inevitably be frequently made. On the one hand, truly organic affections that have not yet developed the signs in question will incorrectly be labelled "functional," while, on the other hand, in mixed cases, only the organic affection will be recognised and the curable neurotic one will be overlooked. Diagnosis should be based equally on a knowledge of the characteristics of organic disease and of the neuroses. The latter are not the vague conditions they are generally conceived to be, but have specific features just as characteristic as those of organic disease. A number of instances of these are given, and the question of the inter-relation of the two groups of conditions is discussed, as well as the types of mistake in diagnosis most frequently made.

AUTHOR'S ABSTRACT.

AMYOTONIA CONGENITA. HUMMEL, *Journ. of Nerv. and Ment. Dis.*, (123) Dec. 1910, p. 749.

A TYPICAL case of this nature is recorded in a boy of 3. Ten months later some improvement in the condition had taken place. There was no other case in the family. Weakness had been noticed in the first year of life.

ERNEST JONES.

NOTES OF A CASE OF HEMIATROPHY FROM SCLERODERMIA. (124) P. COOMBS KNAPP, *Proc. of the Roy. Soc. of Med.*, Jan. 1911, Neurological Sec., p. 28.

A MAN of 18, nothing to note in family or early personal history. Two years ago paroxysmal pains in left leg, followed by spas-

modic clonic contractions of thigh muscles and wasting of the whole limb. Patches of scleroderma then developed on left epigastric region and on left leg and thigh. Wasting later appeared in left arm and slightly in left face. No change in sweating, but skin on left side as a whole was thinner and smoother, and the hair was greatly lost, especially on the leg. The muscles on the left side were weaker than those on the right; they reacted more quickly, and to a weaker electric current.

J. H. HARVEY PIRIE.

VON RECKLINGHAUSEN'S DISEASE. (*Contributo allo studio del (125) morbo di Recklinghausen.*) A. MUTO, *Riv. di Patol. nerv. e ment.*, 1910, xv., p. 656.

AFTER a general description and review of the various theories as to the nature of the disease, Muto records a fatal case in a woman, aged 53. At the time of her death she presented 3030 fibromata, including some on the hard and soft palate, and at the vulvar commissure. No nerve tissue was found in the specimens examined. Innumerable pigment spots were also present.

Tactile sensibility of the left half of the body was much diminished. Painful and normal sensibility was present, but was somewhat diminished. Special senses intact. Intelligence normal, but memory for past events much impaired. Exaggerated feeling of modesty. Skeletal changes consisted in marked thoracic kypho-scoliosis, with flattening and curving of both tibiae.

Death was due to cancer of the breast, the nodules in the mammary region having undergone a malignant degeneration.

Necropsy. — Brain and cord normal. Cervical sympathetic ganglia enlarged to three times the normal size. Cervical sympathetic trunk twice the normal size and of fibrous consistency. Thoracic sympathetic normal. Semilunar ganglia twice the normal size and of fibrous consistency.

Histologically the cervical and semilunar ganglia showed a marked thickening of their connective-tissue capsule. The new-formed tissue was poor in nuclei and blood-vessels. The sympathetic nerve cells were reduced in number and more or less infiltrated with pigment granules. In some parts of the cervical sympathetic cord there was the same fibromatous new formation.

Glands of Internal Secretion. — Macroscopically the hypophysis was larger than normal. Histologically it showed an absence of connective-tissue formation and a great abundance of acidophilous cells. In the posterior part of the epithelial lobe there were numerous vesicles full of colloid substance. The gland thus showed signs of functional activity

contrary to what might have been expected at the patient's age. The thyroid was atrophied and showed a great increase of connective tissue. The right supra-renal contained a cavity, the left was larger than normal. There was intense pigmentary infiltration of the cortex.

These findings supported the theory of Pende, according to whom the sympathetic and glands of internal secretion form two systems, physiologically and pathologically synergic, so that a morbid process arising in one soon makes itself felt in the other. Two factors are required for the evolution of this morbid process—a constitutional and an occasional cause. The constitutional consists in a developmental anomaly of the two systems, while the occasional cause is provided by trauma, intoxication, or infection.

J. D. ROLLESTON.

CLINICAL AND PATHOLOGICAL OBSERVATIONS ON VON (126) RECKLINGHAUSEN'S DISEASE. (*Beitrag zur Recklinghausenschen Krankheit. Klinische, pathologisch-anatomische und histologische Beobachtungen, mit besonderer Berücksichtigung des Hautnervensystems.*) C. VIGNOLO-LUTATI, *Monatsh. f. prakt. Derm.*, 1911, Bd. lii., p. 51.

A RECORD of two cases. (1) Man, aged 25. General neuro-fibromatosis with symptoms of suprarenal insufficiency. Pigment patches were present at birth on every part of the skin except the face. The skin tumours appeared in adolescence. Three years before death he began to lose strength without obvious cause, and to suffer indefinite pain after food. Subsequently nausea, vomiting, and extensive melanoderma of the face and neck developed. Death occurred from exhaustion.

Necropsy.—Central nervous system normal. No tumours on the sympathetic or deep nerves, except on the crural branch of the genital crural, on which ten small tumours were found. Sclerosis of suprarenals. Warty elevations in mucosa of stomach and duodenum.

(2) Man, aged 57. Dermo-fibromatosis and neuro-fibromatosis of pseudo-tabetic type. No syphilis. In addition to the ordinary symptoms of von Recklinghausen's disease, he presented the following tabetic phenomena:—Argyll-Robertson pupils, lightning pains, vertigo, and staggering gait. His maternal grandmother, who died at ninety-six, and his mother, who died at seventy-four, had had the same cutaneous symptoms.

The pigment spots had been present at birth. At twelve years he had severe typhoid fever, after which the skin tumours appeared.

These bore no relation clinically to the course of the nerves, except in the region of the left shoulder, where they were connected with the circumflex nerve, and gave rise to severe neuralgia. He also suffered obstinate neuralgia in the sacro-coccygeal region and side of the left thigh, where some small tumours could be felt along the course of the rami efferentes of the sacro-coccygeal plexus and lateral cutaneous nerves of the thigh. Biopsy of one of the tumours removed from the left shoulder showed it to be a true neuro-fibroma, while a tumour removed from the back showed an absence of nerve-fibres.

J. D. ROLLESTON.

GENERALISED NEURO-FIBROMATOSIS. PAINFUL NEUROMA (127) OF INTERNAL ROOT OF THE MEDIAN. REMOVAL. RECOVERY. (*Un cas de neuro-fibromatose généralisée. Névromes douloureux de la racine interne du médian. Ablation. Guérison.*) HARTMANN, *Bull. et mém. de la Soc. de Chir. de Paris*, 1910, xxxvi., pp. 1179 and 1239.

THE record of a successful operation in a man aged 29, the subject of von Recklinghausen's disease, admitted to hospital for pain in the right upper limb. Microscopical examination showed the tumour to be a fibro-sarcoma developed in the sheath of the median, and not a true neuroma.

J. D. ROLLESTON.

PEDUNCULATED FIBRO-SARCOMA OF THE INTESTINE IN A (128) WOMAN AFFECTED WITH GENERALISED NEURO-FIBROMATOSIS. (*Fibrosarcome pédiculée de l'intestin chez une femme atteinte de neuro-fibromatose généralisée.*) HARTMANN, *Bull. et mém. de la Soc. de Chir. de Paris*, 1911, xxxvii., p. 41.

A WOMAN, aged 46, during an operation for uterine fibromata, was found to have a growth of the small intestine, which was removed, and entero-anastomosis performed. Only one other instance, recorded by von Recklinghausen himself, exists in which a jejunal growth in generalised neuro-fibromatosis has undergone a sarcomatous change. When seen a year after the operation there was no sign of recurrence in the intestine or abdominal cavity, but the patient complained of lumbar pain. There were no sphincter troubles nor paraplegia. Her symptoms were probably due to development of neuro-fibromatous nodules on the spinal roots of the cauda equina.

J. D. ROLLESTON.

SURGICAL INDICATIONS IN VON RECKLINGHAUSEN'S

(129) **DISEASE.** (*Indications chirurgicales dans la maladie de Recklinghausen.*) H. MORESTIN, *Bull. et mém. de la Soc. de Chir. de Paris*, 1911, xxxvii., p. 1.

A RECORD of three cases. (1) A boy, aged 10 years, in addition to pigment patches and warty growths, presented an enormous cervico-facial plexiform neuroma in which the right ear was involved, and a similar tumour over the left scapula. Three operations were performed, but were followed by recurrence and considerable extension of the growths. Several hard tumours also appeared in the course of the median ulnar and musculo-spiral nerves, and the vision, which had hitherto been normal, became progressively myopic.

(2) A girl, aged 18 years, the subject of generalised neuro-fibromatosis, presented an enormous and inoperable sarcoma of the great sciatic nerve, which filled half of the pelvis and became continuous with a large external tumour on the buttock.

(3) A man, aged 45, with generalised pigment patches and fibromata. Morestin removed about a dozen painful tumours from the trunk and the most disfiguring growths from the face.

J. D. ROLLESTON.

THERMO-ANÆSTHESIA IN ZOSTER. (*La thermo-anesthésie au cours du zona.*) F. RAMOND, *Bull. et mém. de la Soc. méd. des Hôp. de Paris*, 1910, xxx., p. 649.

A STATISTICAL note based on the study of forty-three cases of zoster. Systematic examination of the various forms of sensibility showed that tactile sensibility was diminished and painful sensibility increased, as previous investigators had found, but that thermo-anæsthesia was more constant than the other variations of sensibility. Anæsthesia or hypoæsthesia to heat was particularly frequent. The duration of thermo-anæsthesia varied with each case. As a rule it disappeared at the end of a month, but it might last several months.

J. D. ROLLESTON.

CONJUGAL AND FAMILIAL CASES OF TABES AND GENERAL

(131) **PARALYSIS.** BEAUSSAT, *Journal de Neurologie*, Nov. 5, 1910, p. 341.

THE conclusions of this paper, which contain a number of references to the literature, are simply that these cases are very common, and ought to be looked for methodically. Syphilis is, for all practical purposes, the exclusive etiological factor.

S. A. K. WILSON.

PAL'S VASCULAR CRISES. (Zur Lehre von den Palschen (132) Gefässkrisen. Ein Fall gastrischer Krisen die jedesmal mit dem Westphalschen Symptom verbunden waren.) JOSEFOWITSCH und LIFSCHÜTZ, *D. Zeitsch. f. Nervenheilk.*, Bd. 40, 1910, S. 464.

THE patient was a confectioner of 36, who had had syphilis sixteen years previously. For five years he had paroxysms of abdominal pain and causeless vomiting, later, diminution of sexual power, delayed micturition and, finally, attacks of pains in the limbs. On physical examination the pupils were unequal and of the Argyll-Robertson type, there was tachycardia, patches of diminished cutaneous sensibility in the lower limbs, and definite swaying of the body with the eyes shut. The knee jerks were lively except during the gastric crises, when they were temporarily abolished. No reference is made to the ankle jerks. The case was evidently one of tabes.

Numerous observers have noted temporary appearance of certain tabetic signs (*e.g.* Argyll-Robertson pupils, cutaneous anæsthesia, loss of knee jerk, angio-neurotic oedema, etc.) during gastric crises and their diminution or disappearance in the intervals between the attacks.

Various explanations of the occurrence of gastric crises have been offered. Of these hypotheses Josefowitsch and Lifschütz prefer that of Pal, who attributes the crisis to spasm of the vessels of the abdomen. Pal found the blood-pressure to be increased during the crisis, sometimes as much as 150 per cent., as compared with the inter-paroxysmal pressure. The rise of pressure precedes the crisis, and if the pressure be brought down by nitroglycerine or other vaso-dilators, the crisis disappears. According to Pal's dictum the pre-critical vascular spasm is a reflex phenomenon, the result of irritation of the corresponding posterior roots.

PURVES STEWART.

A CASE OF FAMILIAL DISEASE, ETC., GREATLY IMPROVED (133) BY X-RAY TREATMENT. (Un cas de maladie familiale, avec symptomes de maladie de Friedreich et d'héréd-ataxie cérébelleuse très améliorés par les rayons X.) SÖDERBERGH, *Revue Neurologique*, July 15, 1910, p. 7.

A BOY of 13, with spastic lower extremities, various cerebellar symptoms, club feet and hands, and in whose family other members were similarly or analogously affected, improved con-

siderably under X-ray treatment. The hypertonicity of the legs almost entirely disappeared, the tremor became much less, the impairment of speech and of gait diminished.

S. A. K. WILSON.

VISUAL DISTURBANCES IN MULTIPLE SCLEROSIS. KLING-
(134) MANN, *Journ. of Nerv. and Ment. Dis.*, Dec. 1910, p. 734.

TWELVE cases of multiple sclerosis in which the ocular symptoms were carefully investigated are recorded. The subject is then discussed in a diffuse manner that renders the making of an abstract difficult. An irregular contraction of the field, especially for colours, was present in eleven cases; dyschromatopsia in four; a large scotoma of one inferior temporal quadrant in one case, and multiple paracentral scotomata in eleven. Scotomata were unilateral in two cases, bilateral in ten; they were in the temporal field twenty-one times out of twenty-four. Single external ophthalmoplegias were found in two cases. The writer says that true nystagmus occurs in 15 per cent. of cases of multiple sclerosis, false in 61 per cent.; the former is more significant. Ocular signs occur more frequently in this disease than in any other of the nervous system with the exception of cerebral tumour.

ERNEST JONES.

A TUMOUR OF THE SPINAL CORD. OPERATION. PANSKI,
(135) *Neurologja polska*, Vol. i., Nr. 4, 1911.

A WOMAN, 24 years of age, till then quite healthy, suddenly, and without any period of previous pain, was seized with paralysis in the right side. She was feverish, and the next day paralysis appeared in the left side also. Some paræsthesiæ were present for a short time in the paralysed limbs. There was also retention of urine and fæces. After two or three days the patient could not move without help. There was complete paralysis of both lower limbs and incomplete of the upper limbs, with anæsthesia up to the level of the second rib. Large sacral bedsores appeared. The abdominal reflexes were absent. The Babinski sign was present on the left foot, uncertain on the right.

In consequence of the high level of sensory disturbances, and also in consequence of the narrowing of the left pupil and left palpebral fissure and of the great motor weakness in both upper limbs, showing the lesion in the seventh and eighth cervical segments, Panski concluded that the tumour was compressing the spinal cord just on these segments.

After a laminectomy of the sixth and seventh cervical vertebræ, and first dorsal, there was found a subdural tumour growing firmly in the dorsal surface of the cord. The tumour had not grown adherent with the dura mater; it measured 2×0.75 cm. It was very easily removed. Microscopically it was found to be an angioma cavernoso-gliomatosum.

Sixteen days after the operation the patient died, either on account of the debility which was present even before the operation, or more probably on account of the paralysis of the respiratory muscles, which is occasionally observed when the cervical part of the cord is affected.

J. HANDELSMAN.

**TYPHOID SPINE: REPORT OF A CASE, WITH RADIOGRAMS;
(136) COMPLETED BIBLIOGRAPHY.** NATHANIEL BOWDITCH
POTTER, *Med. Record*, 1910, ii., p. 1092.

A RECORD of the case recently reported to the Soc. méd. des Hôp. de Paris (*v. Review*, 1910, p. 499).

J. D. ROLLESTON.

MENINGEAL SYMPTOMS AT THE ONSET OF TYPHOID FEVER.
(137) (*État méningé dothiéntérique initial*.) F. TRÉMOULIÈRES and
TOURAINÉ, *Bull. et mém. de la Soc. méd. des Hôp. de Paris*, 1910,
xxx., p. 725.

A PREVIOUSLY healthy man, aged 21, suddenly developed meningeal symptoms of extraordinary violence. The cerebro-spinal fluid showed a lymphocytosis which at first was pure but afterwards was accompanied by a slight polynucleosis. Subsequently the disease assumed the course of an ordinary attack of typhoid fever. The writers have used the term *état méningé* invented by Widal in preference to meningitis, from which it differs by an absence of micro-organisms and an integrity of the leucocytes.

J. D. ROLLESTON.

TWO CASES OF EPIDEMIC CEREBRO-SPINAL MENINGITIS.
(138) **MENINGOCOCCAL ARTHRITIS AND FATAL ANAPHYLAXIS.** (*À propos de deux cas de méningite cérébro-spinale épidémique. Arthrites à méningococques, accidents mortels d'anaphylaxie sérique.*) VIGOT, *Gaz. des Hôp.*, 1910, p. 1993.

CASE 1.—A male, aged 18 years, had a severe attack of epidemic cerebro-spinal meningitis, which was treated by six injections of Dopter's serum. On the sixth day of disease he developed dry

arthritis of the left shoulder and suppurative arthritis of both knees, meningococci and polymorphonuclears being found in the pus. Vigot quotes a case of a girl, aged 9 years, in whom violent and painful arthritis of the shoulder preceded the ordinary symptoms of cerebro-spinal meningitis. The frequency of joint troubles in epidemic cerebro-spinal meningitis varies. Osler had 6 cases in a series of 111, and Netter 4 in a series of 52. Joint pains due to serum usually appear later than meningococcal arthritis, and are almost always accompanied by a serum eruption.

CASE 2.—A woman suffering from cerebro-spinal fever received five injections of anti-meningococcic serum. The fifth injection, which was given twelve days after the first, was followed by coma and death, which Vigot attributes to anaphylaxis (*cf. Review, 1910, p. 702*).

J. D. ROLLESTON.

**CEREBRAL TUMOUR AFFECTING THE UNDER SURFACE OF
(139) THE CORPUS CALLOSUM AND FILLING THE RIGHT
VENTRICLE.** R. T. WILLIAMSON, *Lancet*, Jan. 28, 1911,
p. 222.

THE chief clinical features of this case were—

(1) Fine tremor in lips, tongue, face, hands, and arms, tremulous speech and mental impairment.

(2) Absence of headache and vomiting until the last two weeks of life.

(3) Marked double optic neuritis.

(4) Well-marked Babinski and Oppenheim reflexes on *both* sides without definite paresis or ankle clonus.

A sarcoma was found on the under surface of the corpus callosum, filling up the right ventricle.

The author considers that bilateral Babinski or Oppenheim signs without ankle clonus or definite paresis of the limbs will be found a useful indication of a median position of a tumour growth.

J. H. HARVEY PIRIE.

CYSTIC TUMOUR OF CEREBELLUM CURED BY OPERATION.
(140) (*Ueber eine durch Operation geheilte Zyste des Kleinhirns.*)
CASSIRER and SCHIEMDEN, *Muenchen. med. Woch.*, Nr. 47,
1910, p. 2470.

THE patient was a woman who exhibited general symptoms of a progressive intra-cranial tumour, with localising signs which pointed to the vermis and left cerebellar hemisphere. The most

characteristic of these was marked hypotonia of the limb muscles, absence of deep reflexes and cerebellar asynergy. Two days before operation ataxy of the left side developed.

At the operation a simple cyst was discovered near the mid-line in the left cerebellar hemisphere without any evidence of new growth. This was evacuated, and complete recovery followed the operation. The authors comment on the large percentage of successful operations on cerebellar cysts, and review the literature of the subject.

C. M. HINDS HOWELL.

UNILATERAL PHENOMENA OF CEREBRAL CENÆSTHESIA, (141) AND OF "DEPERSONALISATION," ASSOCIATED WITH AN ORGANIC DISEASE OF THE BRAIN. (Phénomènes de cénesthésie cérébrale unilatéraux, et de dépersonnalisation, liés à une affection organique des cerveau.) SOLLIER, *L'Encéphale*, Oct. 10, 1910, p. 257.

THIS is an interesting case which ought to be read in the original. It would appear to show the existence of cerebral cenæsthesia, *i.e.* a special sensibility whereby we are aware of the functioning of the brain from the psychical point of view, and in certain pathological cases from the physical point of view. "Depersonalisation" appears to be linked to impairment of cerebral cenæsthesia. Sometimes the latter is itself associated with organic intra-cranial disease.

S. A. K. WILSON.

THE PATHOLOGY AND TREATMENT OF INJURIES CAUSED BY (142) ELECTRICITY. Sir THOMAS OLIVER, *Lancet*, Feb. 11, 1911, p. 363.

PART of this paper contains a report by Drs Mott and Schuster on the brain of a man who died after seven hours' unconsciousness from electric shock from a current of 20,000 volts. The brain generally was congested and there were numerous petechial hæmorrhages, in addition to one large hæmorrhage in the occipital lobe, corresponding to a severe wound in the scalp. The small hæmorrhages were due to ruptured vessels in the cortex and sub-jacent white matter. Both the extravasated blood and that in the vessels showed evidence of hæmolysis. The ganglion cells of the cortex all showed marked chromatolysis; many showed an intracellular network faintly basophile staining. In some places, especially where there was a hæmorrhagic extravasation, the cells were stained a uniform dull purple colour by the polychrome eosin

stain, as if a coagulative necrosis had occurred. The large and small cells of the medulla showed a marked chromolytic change.

J. H. HARVEY PIRIE.

HEREDITARY CRANIO-CLEIDO-DYSOSTOSIS. D. C. L. FITZ-
(143) WILLIAMS, *Lancet*, Nov. 19, 1910, p. 1466.

IN this paper the author gives an analysis of sixty cases of hereditary cranio-cleido-dysostosis, two of which came under his personal notice, while the rest were all that could be collected from the literature.

The hereditary nature of the disease is well shown, eight families supplying no less than thirty-one affected individuals.

The pathology of the facial and cranial changes is discussed, and considered to be due to the same causes that produce the characteristic features in hydrocephalus, namely, that the base of the skull fails to develop as the increased growth of the brain is accommodated by the opening of the vertex.

The musculature of the altered shoulder girdle is given at length.

The state of the clavicle is analysed, and shows that while the sternal portion is hardly ever absent, the acromial portion is almost invariably lacking. The following table gives the summary of the analyses:—

	Left.	Right.
Both clavicles absent, 6 cases . . .	—	—
One clavicle alone absent . . .	2	0
One bone alone defective . . .	1	3
Sternal end alone represented . . .	23	27
Acromial end alone represented . . .	1	2
Both portions present but ununited . . .	14	17
Both portions joined, but showing by angling, notching, or arching, formation from two parts . . .	5	2
Ligament prolonging inner end outwards	13	11

While of the ligamentous prolongations which replace the acromial portion it is found in the majority of cases they do not extend to the acromion, but go to the following sites:—

	Left.	Right.
To coracoid	10	9
To glenoid	1	1
To rib	0	1
To acromion	1	1

These facts throw considerable light on the development and morphology of the clavicle.

This bone has long been suspected of being the result of the fusion of two separate elements, of which one is preformed in cartilage and the other in membrane.

The disease hereditary cranio-cleido-dysostosis retards and prevents the development of bones preformed in membrane.

The probable fate of the coracoid and pre-coracoid bars of cartilage in the primitive shoulder girdle are then discussed.

The writer shows that the inner two-thirds of the clavicle, the coraco-clavicular ligament, and the base of the coracoid process itself are probably all part of the same bar, while the tip of the coracoid process and the bicornuate ligament are probably parts of a second bar.

One of the author's cases showed an instance where the first of these bars was intact and stretched from the sternum to the glenoid cavity.

The dissections performed by this disease and the method of ossification of the coracoid process both tend to support the idea that the inner two-thirds of the clavicle, the costo-caracoid ligament, and the base of the coracoid process are the representatives of the true coracoid, while the bicornuate portion of the costo-coracoid membrane and the tip of the coracoid process represent the old pre-coracoid.

The positions of the two bars are slightly modified by muscular attachments, while the acromial third of the clavicle is of a more recent ancestry, membranous in origin, and possibly related to the dermal plate of lower vertebrates.

Other possibilities are discussed, but seem to be less likely than the conclusions mentioned.

As to the cause of the disease, nothing definite can be said ; its relation to achondroplasia is pointed to, and the suggestion thrown out that both may be due to a lack of some chemical substance or enzyme which is needed for sound ossification.

AUTHOR'S ABSTRACT.

NEURASTHENIA. *The Practitioner*, Jan. 1911.

(144)

THERE are twenty papers treating of all departments of the subject. A most practical paper is that on "Neurasthenia and some Associated Conditions," in which the diagnosis of certain organic diseases frequently complicated by neurasthenic symptoms is dealt with. An interesting article on "The Sexual Element in the Neurasthenia of Women" illustrates admirably the importance of the condition in gynecology. Splanchnic vaso-motor

paresis is drawn attention to as an important phenomenon in the condition as it is met with in children. All modes of treatment are discussed: Leduc describes a method of applying electricity to the head which has given encouraging results in his hands. The treatment of the subject by so many authorities necessarily involves a good deal of repetition.

A. L. TAYLOR.

**THE INFLUENCE OF PARENTAL ALCOHOLISM ON THE
(145) PHYSIQUE AND ABILITY OF THE OFFSPRING. THEO.
B. HYSLOP, *Lancet*, Jan. 14, 1911.**

IN this address Dr Hyslop discusses evidence as to the effects of parental alcoholism, taken by itself, on the offspring. The conclusions he draws may be briefly summarised as follows:—
1. It is easy to apply destructive criticism to any theory regarding the influence of parental alcoholism on the offspring. 2. The theory under discussion is, Does parental alcoholism (of pernicious kind)—apart from parental degeneracy—influence the physique and ability of offspring? 3. Side-issues cannot be excluded, and our present conceptions of heredity are imperfect. Consequently adequate data for statistics are wanting. 4. The association of alcoholism and degeneration in the parent is insufficiently understood, and the difficulty in distinguishing between cause and effect in parent and child is so great that decision is frequently guess-work. 5. The problem requires that parental alcoholism precedes conception or birth of the child; but in transmission of psycho-neuroses by direct inheritance the latent parental alcoholic tendency may appear after the birth of the child. Hence the two series of cases must be considered separately. 6. Alcoholism itself appears to lead to an increased number of births, and experiments on animals seem to indicate that animals put on alcohol have more numerous but weaker progeny. 7. While various neuroses and defects are instances of “the general controlling determinant,” they are apt to be intensified, and appear earlier in the offspring where parental alcoholism is also present as a factor. 8. Parental alcoholism seems to accentuate the downward trend of inherited psycho-neurosis, and shortens the period of exemption from alcoholism and degeneration with each successive generation. 9. The inheritance of a psycho-neurosis (which would otherwise diminish in the successive generations) is intensified and prolonged by alcoholism. 10. The conclusions arrived at by the Galton Laboratory School of Eugenics and their critics deal with part only of the question at issue.

A. HILL BUCHAN.

PROCREATION DURING ALCOHOLIC INTOXICATION. H. (146) HOPPE (Koenigsburg). Translated and abridged by Kent Oakley Brown. *Brit. Journ. Inebriety*, Jan. 1911, p. 146.

THE mental condition of the parent under the influence of alcohol at the time of procreation is unimportant: the whole question lies in the amount of alcohol in the parental circulation. As small amounts as 2 or 3 minims per pound—equal to 5 to 8 drachms absolute alcohol for adult of 132 pounds—appear to be sufficient to cause inferiority in the young. Exact proof is wanting, but many instances support the view that alcohol in one or other parent can affect the offspring. In ancient legend the misshapen Vulcan was begotten by Jupiter while intoxicated on nectar.

Bourneville found that of 2554 idiotic or epileptic children, 9.2 per cent. were certainly, and 3.3 per cent. were apparently conceived during intoxication. Among 8196 imbecile children in Switzerland, Bezzola found that the curve of the number of conceptions was highest during festival seasons, when that for normal children was lowest.

According to Naecke alcohol appears in the semen soon after ingestion. Gunther found that the spermatozoa of dogs in 1 per cent. ethyl alcohol were damaged at the end of two hours, and ceased action after eighty minutes.

Alcohol and other poisons are among the factors that unfavourably influence the offspring of normal people.

A. HILL BUCHAN.

THE CARE OF CASES OF ACUTE INSANITY. SHOULD DELIRIUM TREMENS BE CLASSED WITH THE INSANE? (147) L. VERNON BRIGGS, *New England Med. Monthly*, Aug. 1910.

IN this paper Dr Vernon Briggs deals mainly with the provisions in Massachusetts for the treatment of cases of delirium tremens, and urges the importance of suitable accommodation for these as distinguished from ordinary "drunks."

A. HILL BUCHAN.

ON THE CLINICAL ASPECT OF INTERMITTENT LIMP. (Zur Klinik des intermittierenden Hinkens.) WM. ERB, *Muench. med. Woch.*, Nr. 47, 1910, p. 2450.

THIS paper is a further contribution by the author, his former paper being published in Nos. 21 and 22, 1910, of the same journal.

He brings forward further evidence of the part played by excessive smoking in producing intermittent limp and arteriosclerosis. However, 42 per cent. of his cases either did not smoke at all, or were very moderate in that respect. He was able in six cases to obtain a syndrome to which Von Goldflam has recently drawn attention, namely, pallor developing after movements in a limb which was before either of normal colour or cyanotic.

The author states that certain of these cases have an acute onset, due not to venous thrombosis, as Higier suggests, but to an acute exacerbation of a chronic endarteritis.

C. M. HINDS HOWELL.

THE CLINICAL ASPECT OF INTERMITTENT LIMP. (Zur (149) *Klinik des intermittierenden Hinkens.*) H. SCHLESINGER, *Neurol. Centralbl.*, Jan. 2, 1911, p. 6.

THE author bases his remarks on fifty-seven further cases which have been under his notice, and deals with the clinical aspect and etiology of the disease. He lays stress on the fact that disease of the larger arteries (femoral, popliteal, iliac) can usually be found if looked for, even when the pulse in the arteries of the foot appears quite good. In four cases he has noted an analogous condition in the upper extremities. He agrees with Erb in regarding excessive smoking as an important predisposing factor; syphilis and diabetes are also important in this respect. The condition occurs in the later decades of life, and is symptomatic of arterial disease (though occasionally venous thrombosis appears to be concerned in its production). Almost any form of arterial disease may give rise to the condition, as, for instance, atheroma of the peripheral vessels, aneurysm, endarteritis obliterans, and acute arteritis (Erb).

C. M. HINDS HOWELL.

AN ACUTE FORM OF INTERMITTENT LIMP — ACUTE (150) **ARTERITIS.** (*Eine akute Form des intermittierenden Hinkens. Arteriitis acuta.*) JOS. PELNÁŘ, *Neurol. Centralbl.*, Jan. 2, 1911, p. 9.

THE case, which is reported in detail, was that of a man aged sixty-one. He presented a typical clinical picture of intermittent limp of acute onset, which cleared up almost completely in the course of five months under treatment with pot. iod. During the acute stage the femoral artery was painful on pressure; there was hyperæsthesia in the hamstring muscles and weakness of the pulse in the arteries of the affected limb. Eighteen months later

there remained a small pulse in the dorsalis pedis artery, but the limp had quite disappeared, and only very slight subjective symptoms remained. There was no evidence of arterial embolism, venous thrombosis, or myositis. The case ran the same course as those of Erb and Higier—namely, an acute onset, followed by a progressive sclerosis of the femoral artery.

C. M. HINDS HOWELL.

ON ASSOCIATED MOVEMENTS. (Ueber Mitbewegungen.) L. (151) HUISMANS, *D. Ztschr. f. Nervenheilk.*, Bd. 40, 1910, S. 221.

ASSOCIATED movements, whether homolateral, contralateral or reflex, are not so rare as the scanty literature referring to them might lead us to expect. Perhaps the best recognised examples are the cases of congenital ptosis, where certain movements of the jaw are associated with elevation of the upper lid. Huismans considers that the explanation of this phenomenon is to be sought in a radiation of activity from one cortical centre to another. Other familiar examples of associated movements are the involuntary movements of hemiplegic limbs, which occur occasionally when the patient yawns or sneezes.

Huismans records a case of stab-wound above the left clavicle where the spinal accessory nerve and part of the brachial plexus, together with the phrenic nerve, were divided. The result was paralysis of numerous muscles of the shoulder-girdle and upper arm corresponding to the fifth and sixth cervical nerves. In this patient strong fibrillary contractions were seen in the anterior part of the deltoid and biceps at every inspiration. This he attributes to an abnormal connection between the peripheral nerves resulting from the stab—accidental nerve transplantation.

Huismans refers also to contralateral associated movements, on voluntary movement, as in infants, also in certain hemiplegics, and on reflex stimulation, *e.g.* the crossed adductor reflex.

His conclusions are as follows:

1. Homolateral associated movements are generally due to radiation of motor impulses in the cortex cerebri.
2. The possibility of radiation through sub-cortical paths cannot be denied, *e.g.* in interruption of peripheral nerves auto-transplantation of nerve-fibres may result from stab-wounds, from pressure, or from inflammatory processes.
3. Contralateral associated movements occur primarily in infants. They gradually become latent as a result of inhibition and practice.
4. Contralateral reflex associated movements are produced by conduction along sub-cortical paths.

5. The normal knee-jerk consists of a primary contraction in the vastus internus *plus* an associated movement in the adductor of the same side.

6. The crossed adductor reflex is not due to stimulation of the opposite obturator nerve, nor to a jarring of the pelvis, but is a true reflex movement conducted by sub-cortical paths. It may sometimes be elicited when the patellar reflex on the side of stimulation is absent.

7. Huismans has never seen a contralateral reflex movement in a healthy adult, although it may occur in neurasthenia as well as in organic disease.

PURVES STEWART.

THE CLIMACTERIC IN MAN. (*Die Wechseljahre des Mannes* (152) (*Climacterium virile*).) KURT MENDEL, *Neurol. Centralbl.*, Dec. 16, 1910, p. 1124.

MENDEL adduces evidence from observations upon thirty patients that there is a period in man in which symptoms appear analogous to those of the climacteric period in women. He alludes to a number of older medical writings, and then formally discusses the symptomatology, diagnosis, prognosis, pathogenesis and treatment.

His patients were between forty-seven and fifty-seven years of age, and had previously been in good health and had not suffered from any neurotic manifestations. They were also muscular, healthy-looking men. They experienced feelings of restlessness, with a tendency to weep, and were readily overcome by effeminate emotions.

Many also complained of rushing of blood to the head, sensation of heat, mental fears and breaking out into sweats, faintness and loss of sleep—in fact, just the symptoms characteristic of the *molimina climacterica* of woman.

They complain of loss of memory and indifference to the events of everyday life. These patients lose the sense of joy and zest of life.

Defects in conduct do not occur.

The libido sexualis gradually diminished, and in rare cases returned on recovery. None of the patients had children after the onset of the climacterium.

There were no signs of bodily disease, in particular no arteriosclerosis.

In general the prognosis is good, the great majority fully recover all their mental powers and interests.

Physical injuries or infectious disease retard or even prevent recovery.

K

The differential diagnosis has to be made from general paralysis, melancholia, dementia senilis, katatonia, maniacal depressive mania, paranoia.

Perhaps the diagnosis from cerebral arterio-sclerosis is the most difficult, but every sign of local brain disease is absent.

Also from neurasthenia or hysteria, the diagnosis is made by the complete absence of any objective signs.

With regard to pathogenesis, Mendel regards the symptoms as due to diminution of the internal secretion of the sex glands.

The writer adds a note on treatment.

W. B. WARRINGTON.

THE CLIMACTERIO IN MAN. (*Die Wechseljahre des Mannes* (153) (*Olimacterium virile*).) BERNARD HOLLANDER, *Neurol. Centralbl.*, Dec. 1, 1910, p. 1182.

HOLLANDER refers to Mendel's paper, and says he has seen similar cases. He agrees with the view that the symptoms depend upon alteration in the physiological secretions. He quotes older writings of Clouston, Halford and Francis Skae (1865).

W. B. WARRINGTON.

ÜBER EUNNUCHOIDE. G. PERITZ, *Neurol. Centralbl.*, Dec. 1, 1910, (154) p. 1286.

UNDER this name a congenital condition is described which has also received the names of dysgenitalismus, infantilism with gigantism, genital adiposity, and geroderma genitodistrophico. Peritz describes four cases.

1. Man, æt. 52. His mental development was considered to be that of a child. The bodily characteristics were a great increase of fat, especially in the mammæ, belly and hips.

The mons veneris had a similar appearance to that of a small child.

The testicles could not be found; there was only a small hard body the size of a cherry; penis and scrotum undeveloped.

Hair has not developed either in axillæ, the face, or over the mons veneris, but upon the head the hair was thick. In voice and general appearance he resembled a woman. The lower limbs were unduly long and there was genu valgum.

In early youth the man had suffered from enuresis nocturna and had severe epileptic attacks.

X-ray examination did not suggest enlargement of the hypophysis.

Case 2. Girl, æt. 17½. Quite undeveloped. No hair in axillæ or over mons veneris. Appearance that of a child; she had never menstruated and the uterus was of the infantile type. Mammæ undeveloped and contained only fat. The hands and feet were abnormally large. Thyroid large, but no signs of Graves' disease.

X-ray examination did not indicate enlargement of the hypophysis.

The mental capacity of the girl was like that of a child.

Case 3. Boy, æt. 8. Height = 1 m., instead of the average, which = 1·16 m. No testicles found. Penis well developed. Mental development was that of a child of two or three years old.

Case 4. Boy, æt. 16. Height = 1·22 m., instead of 1·55 m. No testicles found. No hair in axillæ or on mons veneris. Mentally fairly well developed. Tuberculosis of kidneys diagnosed.

Peritz discusses the relationship between the functions of the internal secretion of the testes and that of the hypophysis, and points out that there is a mutual inter-relationship as established both clinically and experimentally. He suggests that the symptoms described may be due to complementary over-secretion of the hypophysis, though facts show that this gland need not necessarily become enlarged.

The author then considers the inter-relationship between the functions of the hypophysis and the thyroid.

This intimate complementary inter-action makes the significance of symptoms difficult to interpret.

W. B. WARRINGTON.

**ON OPTIC NERVE DISEASES DUE TO POISONING WITH
(155) ORGANIC AND INORGANIC ARSENICAL PREPARA-
TIONS.** SCHIRMER, *Arch. of Ophthalm.*, Sept. 1910, p. 456.

Two cases are described in which atoxylon and arsacetin produced total blindness within twelve and five months respectively. All the organic arsenical compounds of the atoxylon group cause the same form of optic atrophy. This may be due to the production in the body of similar reduction compounds from the different original preparations.

The onset is characterised by scintillation and hazy vision. The field of vision becomes contracted, especially nasally, central vision remaining relatively good. The optic disc soon becomes pale and the retinal vessels very narrow. Progress is slow but sure, only exceptional cases escaping total blindness. The idiosyncrasy of the patient is of much greater importance in producing the atrophy than the amount of the drug administered.

On the other hand, optic nerve affections due to inorganic arsenical compounds are rare. The author was able to collect

only six, and in these a different set of symptoms prevailed, indicating an affection of the nature of a retrobulbar neuritis. The impairment of vision is moderate, and the field shows a central scotoma for colour with normal peripheral limits. Pallor of the temporal side of the disc occurs late. The prognosis is quite good, no case of blindness having been reported.

The author emphasises the difference in the pharmacodynamic action of the two classes of compounds. H. M. TRAQUAIR.

A FURTHER CASE OF OCULAR MUSCLE PARALYSIS FOLLOW-
(156) **ING SALVARSAN.** STERN, *Deut. med. Wchnschr.*, Jan. 1911,
p. 15.

A DOSE of half a gram of salvarsan was administered subcutaneously to a patient at his own request, although he had at the time no symptoms and a negative Wassermann's reaction. Two months afterwards the reaction was again negative, but the patient had paralysis of the left superior oblique muscle with a slight paresis of the left external rectus. There were no ophthalmoscopic changes, but restriction of the fields of vision for colour was found, indicating a possible affection of the optic nerves, especially the right. Central vision was unimpaired.

The author considers that the condition in this case was distinctly to be ascribed to the salvarsan, and suggests that this remedy is not so harmless as has been maintained.

H. M. TRAQUAIR.

A USEFUL METHOD OF ELICITING THE PATELLAR REFLEX.
(157) E. SALOMON, *Neurol. Centralbl.*, Jan. 16, 1911, S. 80.

THIS method is recommended as being one very easily understood and carried out so far as the patient is concerned, in cases where a knee jerk is not easily obtained. The patient, sitting or lying, is directed first to place the sole flat on the ground (or bed) and then to extend the knee as far as is possible, still keeping the sole full on its support (the thigh and leg should then form an angle of about 150°). He is then instructed to bend the toes downwards and point the foot, *i.e.* to forcibly contract the plantar flexors of the foot and toes. As one may readily observe, the flexors of the thigh will simultaneously contract, and we know from the work of Sherrington, Mann, etc., that this relaxes the antagonists, *i.e.* the extensor quadriceps. This slackening of the extensor quadriceps is what is necessary for the most ready eliciting of the knee jerk. The only other point to be noticed is that

the pelvis must not be raised off the bed, because if either the sole of the foot or the pelvis be unsupported, then the quadriceps as well as the hamstrings contract, and it will probably be impossible to obtain the reflex.

J. H. HARVEY PIRIE.

A METHOD FOR DETERMINING THE ABSOLUTE PRESSURE
(158) **OF THE CEREBRO-SPINAL FLUID.** M. A. CASSIDY and
C. M. PAGE, *Proc. of the Roy. Soc. of Med.*, Jan. 1911, Clinical
Sec., p. 56.

THIS simple apparatus consists of a hollow needle of 1.5 mm. bore with a close-fitting stylet. The pointed ends of both are cut at an angle of about 35°, and 2 cm. from the blunt end of the needle is a simple cock. Into the lumen of the needle beyond this can be fitted a tapped nozzle, which is connected to an open glass tube some 18 cm. long and 15 mm. in diameter by a metre's length of rubber pressure-tubing. A wooden clip, to which is attached a measuring tape, can be fixed to any point of this glass tube.

To take a reading, the apparatus is sterilized by heat and the patient prepared in a horizontal position. Normal saline at 120° F. (whose density is almost identical with that of water) is poured into the glass tube and pressure-tubing, and the tap on the nozzle closed when the glass tube is half full; the wooden clip is fixed on at the level of the saline solution. The theca is punctured in the mid-line, the stylet withdrawn, and the cock closed as soon as fluid appears; not more than a drop or two should be lost. The pressure-tubing is then connected on and the glass tube held so that the level of the fluid is at a height above the needle roughly equal to the expected reacting. Both taps are now opened, and the glass tube is quickly raised or lowered, so as to keep the contained solution at its original level; the vertical height of the clip above the needle will then give the intrathecal pressure in terms of centimetres of normal saline solution.

If a proper connection has been established a respiratory excursion should be present.

The authors have obtained readings varying between 7 cm. and 100 cm. They find differences amounting to 30 cm. according to whether the patient was sitting or recumbent, and the least constriction on the veins of the neck considerably raises the pressure; the loss of quite a small amount of cerebro-spinal fluid, on the other hand, produces a marked fall in pressure.

J. H. HARVEY PIRIE.

**THE INFLUENCE OF MERCURIAL TREATMENT ON THE
(159) COMPOSITION OF THE CEREBRO-SPINAL FLUID.**

JAVORSKI, *Revue Neurologique*, Sept. 15, 1910, p. 264.

IN two cases of cerebro-spinal syphilis, and in five out of six cases of tabes dorsalis, the composition of the cerebro-spinal fluid altered after mercurial treatment. The alteration was both quantitative and qualitative. In some cases the actual number of lymphocytes diminished considerably; in other cases they became more definitely rounded, and showed only a minute quantity of protoplasm. The globulin in the fluid diminished, and sometimes entirely disappeared; it was sometimes absent when the diminution in the cellular elements was still very slight. S. A. K. WILSON.

PSYCHIATRY.

**OBSERVATIONS ON NORMAL INDIVIDUALS AND TRAUMATIC
(160) CASES BY MEANS OF THE METHOD OF CONTINUOUS**

ADDITION. (Über Rechnenversuche an Gesunden und Unfallkranken nach der Methode der fortlaufenden Additionen.)

BUDDEE (of Greifswald), *Allg. Ztsch. f. Psychiat.*, Bd. 67, Ht. 6.

THE Kraepelinian school has made considerable use of the method of the continuous addition of adjacent numbers in a large column of numbers, in order to estimate in the individual the degree of fatiguability, of improvement through practice, the influence of a pause for rest, and other factors. In traumatic cases, Specht, using this method, demonstrated increased fatiguability; Plaut, however, does not confirm the results of Specht in this respect. Buddee has examined twelve normal individuals and fifteen cases of traumatic disorder. His conclusions are as follows:—The method of continuous addition is well adapted to estimate the fatiguability of the normal individual. It is not so suitable in cases of traumatic disorder, especially when the individual is only able to make a very small number of additions each minute. The various traumatic cases examined showed lowered efficiency in the test. In no case was the fatiguability beyond the normal. The traumatic cases showed the same improvement on practice as the normal individuals. Their diminished efficiency was evidence of a volitional disorder, and in several cases there was well-marked mental retardation. Simulation can be detected by such experiments; the diminished efficiency of the traumatic cases depends not on simulation but on actual mental retardation. The retardation of the traumatic case is different from that of the manic-depressive and depends on the patient's idea of his own inefficiency.

C. MACFIE CAMPBELL.

ON OBSESSIVE HALLUCINATIONS. (*Beiträge zur Lehre von den*
(161) *Zwangshalluzinationen.*) N. SKLIAR (of Tambow), *Allg.*
Ztsch. f. Psychiat., Bd. 67, Ht. 6.

IN obsessive insanity hallucinations may occur which have all the characteristics of compulsive phenomena, *i.e.* the affective element is absent, the patient is clear and has insight into the morbid character of the phenomenon and has a feeling of its compulsive nature. The author considers that hallucinatory obsessions, *i.e.* cases of obsession accompanied by an hallucination, do not really belong to the group of compulsive phenomena. These hallucinatory obsessions may occur in hysteria and the anxiety-neurosis, where obsessive hallucinations do not occur.

C. MACFIE CAMPBELL.

ON THE SIMULATION OF INSANITY. (*Über Simulation von*
(162) *Geisteskrankheit.*) SCHÜTTE (of Osnabrück), *Allg. Ztsch. f.*
Psychiat., Bd. 67, Ht. 6.

A REPORT and discussion of three cases of simulation.

C. MACFIE CAMPBELL.

SOME OF THE DIFFICULTIES ENCOUNTERED IN MAKING A
(163) **DIAGNOSIS OF PARESIS.** SCHWINN, *Journ. of Nerv. and*
Ment. Dis., Dec. 1910, p. 754.

THREE cases are recorded in which the diagnosis could not be made clinically or by a microscopic post-mortem examination. The main point of the paper is the familiar one that the diagnosis of general paresis can sometimes be made only by microscopic examination.

ERNEST JONES.

THE NATURE AND CONCEPTION OF DEMENTIA PRÆCOX.
(164) ADOLF MEYER, *Journ. Abnorm. Psychol.*, Dec. 1910, p. 274.

MEYER gives here first a destructive criticism of Kraepelin's views as to the nature of dementia præcox, and then describes the more modern conception that we owe to Freud, Jung, and himself. "It is possible to formulate the main facts of most cases in terms of a natural chain of cause and effect, utilising the psycho-biological material at hand, better than by a dogmatic assumption of a specific

but hypothetical unitary toxic principle." "So far, evidence seems to favour the view that dementia præcox is essentially *unlike* general paralysis, and more likely the usually inevitable outcome of (1) conflicts of instincts, and, more concretely put, conflicts of complexes of experience, and (2) incapacity for a harmless constructive adjustment. The mechanism is to quite an extent intelligible in psycho-biological terms." Meyer gives a very clear definition of what he means by psycho-biological factors, and the relation of them to neuro-anatomical factors. The paper should be read in the original.

ERNEST JONES.

ON SOME OF THE MENTAL MECHANISMS IN DEMENTIA

(165) **PRÆCOX.** AUGUST HOCH, *Journ. Abnorm. Psychol.*, Dec. 1910, p. 255.

THE main thesis of this interesting paper, which should be read in the original, is that the apparently unintelligible manifestations of this disease, the incoherent utterances, bizarre acts, etc., are meaningless only on the surface. They are, as Freud and Jung have shown, distorted expressions of fully logical and comprehensible mental processes, the distortion being due to the same reasons (conflict and repression), and being brought about by the same mechanisms as those operative in the production of dreams and of the psycho-neuroses. Two cases are recorded at length in which psycho-analytic observation made it possible to interpret and explain a number of symptoms that were previously quite obscure. Such symptoms symbolically represent the fulfilment of various repressed sexual wishes.

ERNEST JONES.

A REVIEW OF SERUM REACTIONS IN CASES OF NERVOUS

(166) **AND MENTAL DISEASES.** CORSON-WHITE and LUDLUM, *Journ. of Nerv. and Ment. Dis.*, Dec. 1910, p. 721.

THIS is a general review of the subject, together with a short account of the authors' personal experience. They conclude that "the Wassermann reaction is enhanced in value by the parallel use of globulin tests and the cobra venom test; that the Much reaction, by careful standardisation, may be made of much diagnostic value in cases of dementia præcox." The reviewer may remark that the paper was written nearly a year ago, before the fallaciousness and uselessness of the Much reaction was established by numerous German investigators.

ERNEST JONES.

THE WASSERMANN REACTION IN MENTAL DISEASES.

(167) O. SOKOLOWSKI, *Neurologja polska*, Vol. i., Nr. 3, 1910.

THE author has investigated the Wassermann reaction in 180 cases in an asylum for mental diseases. The cerebro-spinal fluid and the blood were tested in 32 cases, the cerebro-spinal fluid alone 9 times, the blood alone 139 times. The following cases were examined:—General paralysis of the insane (23 cases), syphilis of the brain (13 cases), dementia præcox (35 cases), and other diseases in smaller numbers. The conclusions from the author's investigation are: (1) the Wassermann reaction in the cerebro-spinal fluid was definitely positive only in general paralysis; (2) the positive Wassermann reaction in the cerebro-spinal fluid was always accompanied by a positive result of one or both of the other tests (Nonne-Apelt reaction and cytological test), and also by a positive Wassermann reaction in the blood; (3) it is desirable to make the investigation with several antigens, for comparison, at the same time. The most satisfactory antigen is alcoholic extract from the heart of the guinea pig, and the least satisfactory the antigen of Sachs and Rondoni.

J. HANDELSMAN.

TREATMENT.**"606" IN THE TREATMENT OF NERVOUS DISEASES. (Sur**

(168) **quelques résultats obtenus par le "606" dans le traitement des maladies nerveuses.)** G. MARINESCO, *Bull. et mém. de la Soc. méd. des Hôp. de Paris*, 1910, xxx., p. 866.

A record of twenty-five cases divided into the following groups:—

(1) Two cases of cerebral gumma with probable involvement of the meninges. Slight improvement followed the injection in both cases, but in one the symptoms relapsed.

(2) Four cases of syphilitic hemiplegia in young subjects. All were influenced favourably, but in an unequal degree.

(3) Six cases of general paralysis. Results practically nil.

(4) Five cases of tabes. In three there was marked improvement of the lightning pains and bladder troubles, in one a perforating ulcer healed in a few days after injection, and in the fifth there was considerable improvement of the general condition and no aggravation of the pre-existent optic atrophy.

(5) Two cases of ophthalmoplegia. In one there was marked improvement and in the other none.

- (6) One case of bilateral ophthalmoplegia with pseudo-bulbar symptoms. Slight improvement.
- (7) Two cases of spastic paraplegia.
- (8) One case of diffuse cerebro-spinal syphilis.
- (9) One case of early facial paralysis, which disappeared five days after injection.
- (10) One case of trigeminal neuralgia, which considerably improved at the end of a week.

J. D. ROLLESTON.

THE ACTION OF SUGGESTION IN PSYCHOTHERAPY. ERNEST

(169) JONES, *Journ. Abnorm. Psychol.*, Dec. 1910, pp. 217-254.

THE meaning and significance of suggestion, especially in its relations to psychotherapy, are discussed at length, and a number of experiences quoted from older authors which are confirmatory of the views here adopted, those of Freud and Ferenczy. The conclusions are summarised as follows: "The term suggestion covers two processes, 'verbal suggestion' and 'affective suggestion,' of which the latter is the more primary, and is necessary for the action of the former. Affective suggestion is a *rappport*, which depends on the transference (*Uebertragung*) of certain positive affective processes in the unconscious region of the subject's mind; these are always components or derivatives of the psycho-sexual group of activities. The occurrence is a normal one, but takes place to an excessive degree in the psycho-neuroses, on account of the large amount here present of desires that find no adequate outlet; it is one form of the more general mechanism of displacement (*Verschiebung*), by means of which an affect is transposed from an original, unpleasant, and repressed (*verdrängt*) conception to another less unacceptable one. Suggestion plays the chief part in all methods of treatment of the psycho-neuroses except the psycho-analytic one. It acts by releasing the repressed desires that are finding expression in the form of symptoms, and allowing them to become attached to the idea of the physician; psychologically this means the replacement of one symptom by another—namely, psycho-sexual dependence on the physician. This is often of temporary and sometimes of permanent benefit, but in severe cases the replacement is inconvenient and detrimental. In psycho-analysis the repressed desires are permanently released by being made conscious, and hence can be directed, by 'sublimation,' to more useful, non-sexual, social aims."

AUTHOR'S ABSTRACT.

Reviews

PSYCHO-PHYSIOLOGIE DE LA DOULEUR. J. IOTYKO and
M. STEFANOWSKA. Bibliothèque de Philosophie Contemporaine.
Paris : Felix Alcan, 1909.

THE psychology of feeling is undoubtedly one of the most obscure and difficult sections of the science. Feeling in this sense is, of course, distinguished from sensation, and may be defined as the subjective aspect of our mental life. All sensations give rise to a psychic reaction upon them which is termed pleasure-pain, to emphasise the twofold nature of feeling.

There are, however, certain experiences, such as cuts, knocks, burns, which give rise to what we call physical pain, and the question has been raised whether in those cases pain is not itself a sensation similar in kind to other skin sensations, such as heat or contact. The tendency of modern psychologists has been to reject this interpretation and to regard pain in every form not as a sensation but as a quality of sensation. Physical pain is thus identical with mental pain, "they differ from each other only in the point of departure, the first being connected with a sensation, the second with some form of representation, an image or an idea" (Ribot, "Psychology of the Emotions").

We believe that this assimilation of physical to mental pain is due to a faulty analysis; and the book before us should do much to clear up the current confusion of thought. In an acute introductory discussion the authors insist on the necessity for distinguishing from the chaos of disagreeable sensations a perfectly definite group which alone should be termed pain. Special nerves, those with free endings, convey the pain stimuli, and a special centre in the brain interprets them as pain sensations. A succinct account is given of the experimental researches demonstrating the function of these nerves, and indicating the existence and situation of the centre. To the work done by Goldscheider, Frey, Thunberg, Bertholet, Brown-Séguard—to mention a few names only—original experiments have been added by the authors.

Among the other subjects treated, we find pain from the clinical point of view, analgesia, signs of pain, the influence of sex, age, race, and profession upon pain, a toxic theory of pain, and the biological theory of pain.

It is impossible in a short notice to do justice to the mass of material here collected and to the ability with which it is

marshalled, but it is safe to say that all students of the theory of pain will have to take account of the facts and opinions here advanced.

MARGARET DRUMMOND.

DAS PROBLEM IM "BAUMEISTER SOLNESS." OSCAR ARONSOHN.
Halle: Marhold, 1910. Pp. 64. M. 1.60.

THE greater part of this brochure is taken up with what is mainly a descriptive account of the characters and plot of Ibsen's "Master Builder," the first play belonging to his so-called "decadent" period. The play will be recognised by those who are familiar with the psycho-analytic method as being the one that, perhaps more than any other, gives plain clues to the deepest motives and desires of Ibsen's heart; much of his most intimate mental life lies there as in open book. Aronsohn, however, who shows a very limited understanding for psychological penetration, deals with the problems almost entirely from a purely psychiatric point of view. Shortly put, his conclusions are that Solness is the victim of "Paranoia religiosa simplex chronica," and that the action that causes his downfall is due to a long-cherished sadistic impulse on the part of Hilda Wangel. The first of these conclusions is not important; labels matter but little in such questions, where the whole point lies in the working out of a given character in its interplay with the environment. The second one is more important, as with it is connected the question of the meaning of the tragedy itself. This is not the place to enter into a discussion of the problems involved, but the reviewer must state his emphatic dissension from Aronsohn's main conclusion. To see in Hilda's conduct nothing but the working of sadism is to obscure most of the psychological motives impelling her, while it betrays a singular ignorance of the significance of sadism; this, indeed, the author shows throughout, as, for instance, in his astonishing statements that it is an unnatural and perverse sexual impulse and that it rarely occurs in women. The brochure contributes little of value to the understanding of the play, and seriously misleads in its attempt to unravel the psychology of it.

ERNEST JONES.

**WEITERE UNTERSUCHUNGEN AN GEISTESKRANKEN MIT
PSYCHOMOTORISCHEN STÖRUNGEN.** KARL KLEIST.
Leipzig: Klinkhardt, 1909. Pp. 309. M. 7.60.

THIS volume presents a continuation of the line of research laid down by the author in his "Untersuchungen zur Kenntnis der psycho-

motorischen Bewegungsstörungen bei Geisteskranken," which appeared in the same series as this (Bibliothek medizinischer Monographien). The two publications have aroused a remarkable interest, and have led to the appearance of several valuable critical papers. This is perhaps due less to the detailed contributions they contain than to the perennial interest taken in the fundamental problems involved in Kleist's investigations, especially in the old question as to the relative importance of psychological and anatomical conceptions of psychotic symptoms. On the one hand, the anatomists greet the work as a valuable step towards the neurological formulation of such symptoms, whereas, on the other hand, psychologists regard it as a last desperate attempt to uphold the possibility of this formulation.

Essentially it consists of an extension of Wernicke's attempts to describe and explain psychotic manifestations in anatomical language. It will be remembered that Wernicke largely based these attempts on his knowledge of aphasia, which he took as a prototype of mental disturbances. He laid great stress on the motor phenomena of mental disorder, attributing to them in many cases a primary importance, and postulating as the cause of them a transcortical interruption on the motor side of the sensory-psycho-motor reflex. However, the inadequacy of his conception was soon apparent even in the sphere of aphasia itself, where it was seen that he had laid too much emphasis on the purely motor-speech aspect of the disorders. Kleist has two advantages over Wernicke in that his work is based on a more thorough knowledge of the intra-cerebral paths, of the choreiform and athetoid symptoms related to thalamic and cerebellar lesions, and on the important work done by Liepmann and others in regard to apraxia. He is therefore able to be bolder than Wernicke, for, unlike him, he does not postulate a pure "motility-psychosis" with a practically intact psyche, but endeavours to account for the psychical disorders themselves as being secondary to the motor disturbances. His main standpoint, however, is that of Wernicke, the psychomotor disturbance being regarded as a transcortical affection quite independent of any disorder of will or thought.

Kleist's work needs a much fuller criticism than can be given here, but a few of the insuperable objections to it may shortly be indicated. They may be raised from the anatomical, the clinical, and the psychological side. In the first place, no attempt whatever is made to bring any anatomical demonstration of the views maintained; the whole basis is nothing but pure conjecture. It is true that he repeatedly draws an analogy between the stereotyped mannerisms of insane patients and the choreiform, athetoid, and clonic movements met with in lesions of the fronto-cerebellar

paths, in which he places the hypothetical lesion of the former ; but only a slight analysis of these mannerisms is sufficient to show how extremely superficial this analogy is, and how flimsy a basis it is on which to erect far-reaching generalisations. Even if it were shown that the paths in question were implicated, it would be far from proving that such a lesion was a primary one ; in neurology a symptom can be attributed to a lesion of a given area only when it is proved that no other part of the nervous system is affected. When one further recollects that the symptoms to be accounted for, *e.g.* catalepsy (especially in manic-depressive insanity), can disappear and reappear from one minute to another, then to postulate a widespread lesion that leaves not even a microscopic trace behind, and produces such remarkable effects, is to assume the existence of a pathological process with which we are totally unfamiliar, and plunges us back into the nebulous conception of "functional disorders" from which there has of late seemed some hope of emerging.

To prove that these complex manifestations are the result of an anatomical affection of the motor system, it is necessary not only to demonstrate the presence of such an affection—which Kleist does not even attempt to do—but also that there is no disturbance of higher processes, *e.g.* psychical. Kleist's assumption that much of the psyche is primarily intact is based on what one can only describe as naïve reasoning. For instance, when he finds a patient who declares that he wishes to carry out a given act but cannot, he concludes that the incapacity is a paralytic one. This is exactly the same as concluding that a hysteric who wishes to write a letter but cannot bring himself to do it must be suffering from an anatomical affection of the pyramidal tracts. Kleist appears to ignore all our knowledge of inhibition and conflict of motive. It is certainly more accurate to regard such a defect as paraboulic than as parapractic.

Perhaps the most serious objection to Kleist's views is the following :—Although he accounts for many of the purely mental symptoms as being secondary to the motor, he acknowledges that this explanation can apply to only a small part of them ; the other mental symptoms he considers to be quite independent in structure and significance. He further admits that there is an obvious close association between this group and the former group of motor and mental symptoms, a fact he goes on to explain (!) by assuming that the underlying lesions must in both cases affect neighbouring areas of the frontal lobe. This confession of bankruptcy is most damaging to his whole case, for when one considers how intimately the symptoms he attributes to his "motility-psychosis" are bound up with the rest of the mental disorder, the assumption that we have to do with two independent and abruptly separated affections—

which happen to be associated through a hypothetical anatomical contiguity—is seen to be not merely gratuitous, but in the highest degree improbable. That the stereotypies and mannerisms in question are expressions of the fundamental disorder of the whole personality is accepted by most clinical psychologists who have studied the matter, and indeed in numerous instances is an unavoidable conclusion. In other words, it is evident that many, and probably that most, of such symptoms have a *logical psychological meaning*, which cannot be expressed in anatomical language. It is true that the psychological interpretation of many of them is difficult, and sometimes, owing to our imperfect means of investigation, impossible; but since Jung's epoch-making work on the psychology of dementia præcox we have gained not only a deeper knowledge of the psychological mechanisms that are the cause of these difficulties, but also the reasonable expectation that further advance along the lines he has laid down will give us a fully intelligible explanation of the psycho-pathological processes involved in the production of these distorted mental manifestations.

Even in the relatively small field in which Kleist has tried to interpret mental disturbances as the secondary results of a primary motor defect it is impossible for any modern psychologist to agree with his methods or conclusions. The principles on which his arguments are founded are held by a rapidly diminishing circle, and are certainly too unsound to build an important superstructure on. I refer especially to the exaggerated importance he attaches to innervation and movement in determining the mental processes of attention and distraction—he differs from Wernicke in not attributing much significance to the sensory aspects of the latter process—and to the inadequate and antiquated James-Lange theory of the emotions.

In the reviewer's opinion, any value that may reside in Kleist's work will be evident only when it is objectively shown that some of the symptoms of dementia præcox are due to anatomical affections of the sensory-motor tracts. Most psychiatrists believe that this is theoretically a possible, if not a probable, demonstration, but it has never been made as yet, and Kleist's work has hardly brought it much nearer. But one must protest against the two fallacies that vitiate most of his work, first that one is justified in arguing from such superficial analogies as those that exist between chorea and stereotyped mannerisms, and secondly that the occurrence of a motor manifestation implies a cause primarily and directly implicating the efferent system of fibres. Such reasoning would reduce all our movements to nothing more than changes in the functioning of the pyramidal tracts or of the motor nerves, a simplification that no doubt would hugely gratify the material-

istic school of philosophy, but one for which—to put it mildly—there is at present no scientific justification in fact. Both the fallacies just referred to can be illustrated by the example of hysterical convulsions and the generalised fits resulting from high intracranial pressure. It is, of course, true that there is a certain outward resemblance between the two occurrences, but anyone who has penetrated into the network of phantasy, desire, and mental conflict which is symbolised in a hysterical convulsion would hardly be able to resist smiling at a naïve attempt to reduce the whole matter to an over-excitation of the Betz cells. In short, the attitude represented by Kleist's work, though undoubtedly popular in certain quarters, is fraught with so many grave errors of both method and evidence that it cannot be regarded as one that promises to be fruitful to the science of psychiatry.

ERNEST JONES.

LES FOLIES RAISONNANTES. LE DÉLIRE D'INTERPRÉTATION. P. SÉRIEUX and J. CAPGRAS. Paris: Félix Alcan.
7 fr.

THIS monograph treats, in a full and interesting manner, of the insanity of "Interpretation." The characteristics of this form of mental disease are two classes of apparently contradictory phenomena: on the one hand there are manifestly insane symptoms, on the other, there is a striking preservation of mental activity. The former class furnishes positive symptoms of insane ideas and interpretations; the latter presents negative symptoms—integrity of the intellectual faculties and the absence or infrequency of hallucinations.

The principal, positive symptom, found in examination of these cases, is the fixation of the attention on some romantic theme. Ideas of grandeur, isolated, combined, or succeeding each other, are regularly met with. Frequently, there are ideas of jealousy, mystical, and erotic conceptions; hypochondriacal tendencies are sometimes observed; exceptionally, ideas of self-accusation; more rarely still, thoughts of demoniac possession. If the nature of the delusions in such cases is not communicated to the examiner, he must bear in mind that the person who has insane delusions may appear to be lucid and reasonable, and show a complete absence of serious trouble of the intellectual and affective functions.

The authors are of opinion that the origin and causes of the psychosis are constitutional, and its development is due to an anomaly of the personality. This anomaly is characterised by

hypertrophy or hyperæsthesia of the Ego and by circumscribed weakness of the power of self-criticism.

Insanity of "interpretation" has to be discriminated from other psychoses, and this differential diagnosis is fully discussed.

Special chapters deal with the history of the reasoning insanities and their classification: the authors establish a strong case for regarding the class of cases they have described as distinct from the other forms of reasoning insanities. They conclude a nosographical essay with a classification of the reasoning insanities which they would like to see adopted.

The prognosis is not favourable, it is an incurable affection. In spite of its incurability, a number of its victims are able to live outside of an institution. The treatment as a rule requires confinement in an asylum, especially in the early stages of the affection. Attention to the bodily health and moral treatment sum up the resources at the command of the physician.

Many interpreters commit crimes and misdemeanours as the result of impulsive or premeditated violence. While they are irresponsible, their mental condition, as already noted, is often difficult of recognition. The medico-legal relations thus involved are amply discussed. The monograph ends with an appendix dealing with the insanity of "interpretation" as depicted in the work of the novelist Strindberg. This novelist has been called the Swedish Ibsen, and the work specially referred to is a novel entitled "The Speech of a Fool." HAMILTON C. MARR.

LES INVALIDES MORAUX. MAIRET and EUZIÈRE. Paris: Masson, 1910. Pp. 282. Frs. 6.50.

AFTER a short account of the literature on the subject, practically confined, as are their references throughout, to writings in the French language, the authors propose the term moral invalidism instead of moral insanity, etc., to denote the conditions in which defects in the moral sphere are at least as prominent as those in the intellectual. They form four types: moral atrophy (non-development), moral perversion (outburst of a given evil tendency), moral inversion (general anti-sociability and resistance to moral education), and moral instability (fickle judgment with capacity of being readily influenced). These types are discussed at length and illustrated by the description of cases.

The whole production is superficial and banal; nothing of value is added to our knowledge of the subject. It is becoming increasingly evident that what is needed in this field is neither statistical observations nor descriptive records, but precise psycho-

logical investigation of the significance and genesis of the individual manifestations and tendencies; at present the psycho-analytic method is the only one that promises to throw light on these obscure problems. The book contrasts very unfavourably with, for instance, Gross' recent work, "Ueber psychopathische Minderwertigkeiten."

ERNEST JONES.

BOOKS AND PAMPHLETS RECEIVED.

A. Pick. "Zur Psychologie des konzentrisch eingeengten Gesichtsfelder." Bonn: Martin Hager, 1910.

John Wyllie. "Meningitis, Sinus Thrombosis, and Abscess of the Brain, with Appendices on Lumbar Puncture and its Uses, etc." London: H. K. Lewis, 1911. 6s. 6d.

Schlesinger. "Über Pneumokokken-Meningitis und ihre Prognose." Wien: Moritz Perles, 1911.

Schlesinger. "Zur Klinik des intermittierenden Hinkens" (*Neurol. Centralbl.*, Nr. 1, 1911).

Bianchi. "La sindrome parietale" (*Ann. di Nevrol.*). Napoli: F. Lubrano, 1910.

Reiss. "Die elektrische Entartungsreaktion. Klinische und experimentelle Studien über ihre Theorie." Berlin: Julius Springer, 1911. M. 4.80.

Shanahan. "Some Phases of the Treatment of Epilepsy which should be given more Attention" (*Diet. and Hygienic Gaz.*, Dec. 1910).

New York State Journ. of Med., No. 1, 1911.

Bethge. "Der Einfluss geistiger Arbeit auf den Körper unter besonderer Berücksichtigung der Ermüdungserscheinungen." Halle: Marhold, 1910. M. 1.20.

Glasgow Medical Journ., Jan. 1911.

Th. Simon. "L'Aliéné, l'Asile, l'Infirmier." Paris: O. Berthier, 1911. 4 fr.

Neurographs, Vol. i., No. 3, Jan. 1911.

Langdon and Cramer. "Brain Tumour of Psychomotor Area" (*Journ. Amer. Med. Assoc.*, Vol. lv.).

Janowski. "De la Névralgie Intercostale" (*Monographies Cliniques*, No. 62). Paris: Masson et Cie, 1911. 1 fr. 25.

Eugene Riggs. "Ophthalmic Migraine" (*St Paul's Med. Journ.*, Jan. 1911).

Review **of** **Neurology and Psychiatry**

Original Articles

CEREBRAL TUMOUR WITH ASTEREOGNOSIS. OPERATION ; RECOVERY.

By J. S. EDWARDS, M.B., Ch B., Bridge of Earn,

AND

J. M. COTTERILL, F.R.C.S.E., Senior Surgeon to the Royal Infirmary,
Edinburgh.

THE following case is of special interest from two points of view :—

- (1) The localising value of astereognosis and arterial spasm.
- (2) The completeness of recovery possible after removal of glioma.

The condition after operation shows also—

- (1) That the stereognostic sense is independent of all other sensation.
- (2) That partial destruction or removal of the post-parietal convolution (parietal lobule) may lead to complete and absolute astereognosis in the hand of the opposite side, without any permanent involvement of other sensation and with no motor weakness.

The case occurred in private practice. It was under observation for several months before operation, and has been under constant observation since. It was seen frequently by Dr Bruce

in consultation, before and after operation. The operation was performed eighteen months ago by Mr Cotterill, in patient's own house, when a small glioma was removed. There has been no recurrence.

The following are notes of the case :—

Miss W., æt. 34.—First seen for headaches, *May 24th, 1909.* The headaches are frequent and troublesome, but not severe. The pain situated chiefly in back of head. It is ascribed to influenza, of which she had a slight attack a month ago, and to excessive motoring. There is a history of slight *concussion* five years ago, the result of a fall from dog-cart. Patient fell on back of head and was rather dazed, but there was no loss of consciousness. Has had occasional occipital headaches since. No previous illnesses except measles and whooping-cough. Was rather anæmic as a child. She has always led a healthy and active life, motoring, fishing, etc.

Family History.—Two maternal aunts died of malignant disease. Family history otherwise unimportant.

On examination of the nervous system nothing abnormal was discovered. The headaches were accompanied by no other symptoms. Patient was given a mixture of ammon. bromide, which quickly relieved the pain.

July 16th.—The headaches have become troublesome again ; no other symptoms. Bromide resumed, with favourable result.

Oct. 4th.—Has been assisting at a bazaar for last two days, but had to desist owing to return of headaches. From this time—*i.e.* six months after onset—the symptoms progressed intermittently. The headaches became gradually more severe and paroxysmal in character. The pain was confined to back of head, and radiated down back of neck and down *right* arm. There was slight numbness and tingling in fingers of *right* hand. Patient was seen daily, and was treated for cervico-brachial neuritis. Blisters were applied over the great occipital nerves, and gave great relief. More blisters to back of neck, and patient given phenalgin, 10 gr. 4 hourly.

Oct. 11th.—Condition much improved ; is up again, and has only occasional headaches. The pain is now entirely paroxysmal ; each attack lasts about ten minutes, and then passes off completely. There are no other symptoms, no dizziness or sickness. There is nothing to be found on examination of the nervous system.

Blood—R.B.C., 3,900,000 ; W.B.C., 16,000 ; Hbg, 80 per cent. Film shows polyleucocytosis.

Oct. 28th.—Headaches still troublesome, otherwise unchanged.

Oct. 31st.—Was sick once to-day, during a paroxysm of pain. The headaches are becoming more severe. On *ophthalmoscopic* examination the discs show slight indefinite blurring.

Nov. 1st.—Severe headache all day and frequent sickness. Is being confined to bed in a darkened room. The breathing during sleep is deep and irregular. Tried with various drugs, phenalgin, exalgin, phenacetin, etc. ; none seem to give any relief.

Nov. 2nd.—Condition unchanged.

Eyes.—Both discs show blurring and slight dipping of the vessels over edge of disc. The left is more affected than the right. In the left fundus there are two small recent hæmorrhages. The pupils are equal, and react to light and accommodation. There is no nystagmus and no squint. Vision unimpaired. (From this date the optic neuritis gradually progressed, till at the time of operation both fundi were a mass of hæmorrhages.) The *left eye* was in the early stages more markedly affected, *i.e.* the optic neuritis was apparently more severe on the side opposite to the lesion. In the latter stages both fundi were so disorganised that it was impossible to draw any comparison.

Reflexes.—Knee jerks, equally exaggerated. Ankle clonus, slight (not true clonus). Plantar reflex, flexor on both sides. There is nothing else to note in the nervous system. The temperature remains constantly normal. Blood still shows a slight polyleucocytosis (15,000).

Nov. 3rd.—Headaches now almost unbearable, has to have morphia. They are still entirely paroxysmal, but the whole head feels sore after the paroxysm has passed. There is slight pain on pressure over point of emergency of right great occipital nerve. No other tender areas over scalp. The pain still radiates down back of neck and slightly down right arm. There has been no pain at all in left arm. No numbness or tingling.

Sensation in both arms unimpaired.

The paroxysms of pain vary in frequency ; sometimes patient is entirely free of pain for several hours.

During the paroxysm, which lasts about ten to fifteen minutes, the face becomes pale and the breathing shallow. Patient clutches hold of the bedclothes and sometimes moans, but never cries out. The pulse becomes slow and irregular, and there is frequent *vomiting*. The breathing during sleep is markedly cerebral. Repeated examination of the urine shows no albumin and no trace of sugar. Patient was given pyramidon, 10 grs. 4 hourly. Another blister over great occipital nerve.

Nov. 4th.—Condition improved, pain much less severe. Blister over left great occipital nerve. Pyramidon continued. At this time the diagnosis apparently lay between cerebral tumour without localising signs and neuritis with basal meningitis. The great relief afforded by blistering was difficult to account for without the presence of neuritis.

The headaches from this time were never quite so severe, though other symptoms rapidly developed. In fact, up till a few days before operation the general condition was apparently much improved. There was no further vomiting, and no cerebral breathing during sleep.

Nov. 5th.—Slight indefinite anæsthesia noted in left arm. (This is the first note of any symptom pointing to the right side of brain. There has at no time been any pain, numbness, or formication in left arm.)

Nov. 6th.—More definite anæsthesia in left arm, specially below elbow and on inner side of hand. Thermal sensation and pain sense unimpaired.

Legs normal, both knee jerks exaggerated, plantar reflex flexor. Kernig's sign absent.

Nov. 8th.—*Squint* noticed for the first time. Diplopia on looking to right. Slight paresis of right external rectus.

No other eye symptoms. The fundi show progressive optic neuritis.

Nov. 9th.—Anæsthesia in left arm is much more pronounced. Ataxia in left arm (first noticed). Muscular sense abolished. Thermal sensation much impaired, also appreciation of pain. Marked astereognosis.

Regarding the last symptom, it was examined to-day for the first time. It is much more marked than could be accounted for by the impairment of tactile sensation. There is no motor weakness, yet patient frequently drops things out of her hand

unless she keeps looking at what she is holding. On inquiry she remembers having frequently dropped articles from the left hand during the last two months, when she was up and going about. She states that as long as she is looking at her hand she can keep firm hold, but when her attention is distracted she seems to lose all sensation of holding anything until she hears it drop. It is probable, therefore, that the astereognosis, though never discovered, was present for several weeks before there was any loss of ordinary sensation.

Patient cannot now distinguish any article placed in the hand; cannot distinguish between a penny and a ball of worsted. There is occasional sudden pallor of left arm and hand, apparently due to arterial spasm.

During the period of pallor the left radial pulse is distinctly smaller and harder than the right. This observation was repeatedly confirmed, but patient was too ill to allow of tracings being taken. Tracings since recovery show a permanent difference between the two radial pulses, the result apparently of repeated and prolonged arterial spasm. The tracing from the left side is much smaller and the apex flattened.

No difference in the pulses had been noticed before this time, though the two sides had frequently been compared.

Nov. 15th.—The general condition remains fairly good. The headaches are frequent but not so severe; no sickness. Diplopia as before, and slight ptosis in right eye. The left pupil is more dilated than the right. Both react slowly. Vision is now becoming impaired, cannot distinguish colours.

There are numerous hæmorrhages in both fundi. Anæsthesia is still incomplete, but now extends to root of neck. There is slight motor weakness in left hand, and a slight degree of wasting, especially on inner side of fore-arm and hand. All the muscles respond readily to faradism. No change in the legs. Occasional athetoid movements noted by nurse in left arm.

Nov. 16th.—Pain more severe over right side of head, commencing behind over back of neck and extending through to right eye. During the paroxysms there are vague areas of tenderness over right occipital region and over posterior part of right parietal region. Dull, heavy feeling after pain is over, and feeling of tightness in head.

Nov. 20th-27th.—Condition practically unchanged except for

rapidly failing vision. Cannot now count fingers at three feet. The optic neuritis is intense. Has complained of dizziness and sense of unreality during the last week. Becoming for the first time rather hysterical. Feels as if she were constantly falling to left side. Headaches as before, but now accompanied by severe pain in back of right eye. Became suddenly worse this morning; severe pain and vomiting. Breathing Cheyne Stokes during sleep. Is inclined to be drowsy except when wakened by pain.

Nov. 28th.—No improvement in the symptoms, is now requiring morphia again. It was decided to ask Mr Cotterill to operate to-morrow. Patient herself is anxious for operation.

Nov. 29th.—Examined by Dr Bruce and Mr Cotterill.

There are no fresh symptoms and the general condition is better than yesterday. The mental condition is clear, though patient is much exhausted by the severity of pain.

There is distinct wasting of left arm, especially on inner side. Anæsthesia, etc., as before noted. No further localising signs. It was decided to operate on account of the failing sight and the severity of pain. Localisation lay between the cerebellum and the post-parietal region.

In favour of cerebellum were—

- (1) Rapid development of double optic neuritis.
- (2) Pain in cerebellar fossa and tenderness on pressure.
- (3) Inco-ordination (left arm).
- (4) Dizziness (not marked).
- (5) Feeling of falling to left side.

Against cerebellum were—

- (1) Absence of nystagmus.
- (2) Absence of any dizziness in early stages.
- (3) Restriction of symptoms to arm.

In favour of parietal region were—

- (1) Astereognosis.
- (2) Arterial spasm.
- (3) Anæsthesia and latterly weakness of left arm.
- (4) Tenderness over posterior part of parietal eminence (not well marked).

The paralysis of right external rectus could not be taken as a localising sign, as it might have been accounted for by either condition. The intense radiating pains over occipital nerves and

down right arm, which were so much relieved by blistering, could not be accounted for except by an associated neuritis or by traction on nerves.

Nov. 29th.—The patient was first seen to-day by Mr Cotterill in consultation with Dr Bruce and Dr Edwards.

Immediate operation was determined upon, as the patient was in a very critical condition and appeared to be getting rapidly worse. An injection of $\frac{1}{120}$ gr. scopolamine and $\frac{1}{2}$ gr. morphia having been administered, the patient half an hour later was put under the influence of chloroform, ether being subsequently used to maintain anæsthesia.

It was agreed that the right inferior parietal lobule should be inspected, as the marked astereognosis appeared to us to be the most important, and perhaps the earliest of the focal symptoms: and we were all the more encouraged to take this course as one of us (Mr Cotterill) had a short time before had a very similar case, in which complete astereognosis had been found at operation to be associated with a tumour of the parietal lobule. A bony flap some $3\frac{1}{4}$ inches long by $2\frac{3}{4}$ inches wide was raised by the osteoplastic method. The dura was widely opened, exposing that part of the brain immediately behind the lower part of the post-central convolution. A tumour was at once recognised engaging that part of the cortex in close relation to the supra-marginal convolution. The growth appeared to infiltrate the surrounding brain by an indefinite margin, there being no evidence of a capsule, and on removal with a half-inch margin of apparently healthy brain tissue, it was found to dip to the extent of $1\frac{1}{2}$ inches into the substance of the brain. The tumour, which was of a greyish œdematous appearance and of very fragile consistence, was about the size of a large walnut, and on microscopic examination turned out to be a glioma. Bleeding soon stopped with plugging, and the dura being stitched back into place, the bony flap was replaced and the wound closed without drainage.

The following points appear to be of great interest in this case :—

1. The value of astereognosis as a localising symptom is very clearly demonstrated. With regard to this point we owe a debt of gratitude to our American confrères, Spiller, Mills and Weisenburg.

2. It has been suggested by many surgeons that if on opening the skull a glioma be found, the best practice is to leave it alone, as removal is often productive of harm, and is not likely to be followed by any considerable interval of immunity from return of the growth. Even a single case such as the one at present described would seem to cast very serious doubt on the wisdom of such abstention from removal being made the routine practice.

Recovery after operation was extremely slow and tedious. On first regaining consciousness two hours after operation patient was able to recognise nurse and doctor, but quickly relapsed into unconsciousness. The wound was dressed twice daily, only a small quantity of cerebro-spinal fluid escaping.

The pulse continued rapid, feeble, and intermittent, requiring strophanthus and strychnin. Temperature varied from 100 to 101.

Ten days after operation the general condition improved, the pulse becoming regular and strong. The temperature fell to 99°.

Patient is for the most part unconscious, but can be roused to a state of semi-consciousness in which she is able to recognise doctor and nurse. The eyesight is apparently improved, but there is still slight squint.

For the next two months (*i.e.* Dec.-Jan.) the condition remained practically unchanged.

The following note, Jan. 15th, will serve to show the state at this time:—

Jan. 15th.—Patient is extremely emaciated and lies in bed unable to move or help herself.

The mental condition is entirely unsatisfactory. Though she appears to be conscious at times, and can usually recognise those around her, it is obvious that she has no sense of reality. Memory is entirely in abeyance. The head is turned constantly to the extreme right, and most of the day she is carrying on imaginary conversations with some supposed person on the right side of bed. When spoken to she answers, for the most part coherently, but quickly turns again and resumes her conversation. She has constant delusions and suffers greatly from fearful nightmares and terrors. From these she wakes screaming, and occasionally collapsed. Heroin, bromide, etc., seem to have practically no effect. Hyoscine gr. $\frac{1}{100}$ has been given occa-

sionally, but patient always became seriously collapsed after the injection. It is the only drug that seems to have any effect in checking the terrors.

The delusions vary from day to day, and are associated with terrors of the night before. They are all associated with her head, and take the form of being run over by trains, steam rollers, etc., crushed by elephants, drowned, buried, etc.

The eyesight is apparently much improved, as she can recognise objects at the far side of room. The eye-movements are normal. There is no squint.

The pupils are dilated, the left more than the right. Both react. Ophthalmoscopic examination shows that the neuritis has entirely disappeared, only a few white patches, the results of hæmorrhage, remaining.

Head.—The wound has healed by first intention, except the anterior edge, through which a small hernia has protruded, beginning as a small pea-like bud; this is now the size of a walnut. It is covered only by membrane, and from it a small quantity of cerebro-spinal fluid escapes.

The posterior part of wound is also bulging; the bone here has apparently not united, and the loose plate is being tilted by internal pressure. The skin, however, is intact, and the wound perfectly healed.

Arms.—Both are much emaciated, but the left is more extremely wasted. It is constantly cold, and patient frequently pushes it out of bed with her other hand, or asks nurse to "take away that horrid cold thing." It appears to be devoid of all sensation. There are no trophic disturbances.

Legs.—Both are emaciated. Sensation seems to be delayed in left, but not markedly.

It is impossible, on account of patient's mental condition, to make any accurate observations.

The knee jerks are equally exaggerated. Plantar reflex flexor.

Patient is taking large quantities of nourishment. She is having daily massage, but will not put up with the battery.

In February there was some improvement in the physical condition. Patient became a little stronger, and there was at least no increase in the emaciation. Otherwise her condition was stationary. The hernia continued to swell up till it became

about the size of a Tangerine orange. A large amount of cerebro-spinal fluid escaped, necessitating frequent dressing.

The membrane became gradually covered by a growth of granulation tissue and epithelium from the skin edges. As this began to close in, the escape of fluid became less, and eventually ceased. The posterior bulging also increased in size, so that the whole parietal region was raised about an inch above the general level of scalp. The skin over the posterior part, however, has always remained intact.

Early in March (*i.e.* three months after operation) the condition very rapidly changed. The physical and mental recovery were coincident with the closing in of wound and cessation of leakage.

In a few days, *March 4th to 8th*, the mental condition changed, becoming absolutely clear. It has remained so ever since. Patient is bright and clear, the memory perfect up to time of operation, but an absolute blank since, up to present date. She has the appearance and manner of one recovering from a period of complete unconsciousness, and has the sensation only of a lapse of time. She remembers none of the occasions on which she was apparently perfectly conscious.

On examination of the *left arm* there is marked muscular weakness; there is still some wasting, but not extreme. Thermal and pain sensation are normal, but tactile sensation is imperfect, only deep pressure being appreciated. *Absolute astereognosis*. Sensation in the legs is normal. The eyesight is normally perfect.

From this time progress was steady. The following brief notes will show the rapid improvement:—

March 11.—Carried on to sofa, but pulse became rather bad and patient became dizzy.

March 14.—On sofa for half an hour, no bad effects. Patient is stronger, and is now quickly putting on flesh.

March 25.—Tried to stand, very dizzy.

April 1.—Walked a few steps, with assistance.

April 21.—Able to walk into next room. In walking the left leg is swung round rather than pushed forward. There is a good deal of ataxia. The foot drops a little.

May 4.—Carried downstairs and weighed, 7 st. 13 lbs. She has been gaining weight steadily for the last six weeks.

May 10.—Out in bath chair. Is able to walk fairly well, but gets tired immediately. Still troubled with dizziness.

June 2nd.—Out in motor for half an hour.

June 20th.—Motoring every day ; weight, 8 st. 3½ lbs.

July 1st.—Fishing from boat ; weight, 8 st. 11 lbs.

July 24th.—Weight, 9 st. 3 lbs.

During all this time patient suffered from frequent dull headaches, dizziness, and neuralgic pains in left arm and leg. These have gradually improved.

In September 1910 the hernia became inflamed and tense, the skin over it was slightly ulcerated. Acting on the advice of Mr Cotterill, it was tapped. A long fine needle, attached by rubber tubing to a glass syringe, was inserted through healthy skin, and over bone, so that pressure could afterwards be applied. The needle was pushed forward till it penetrated the hernial sac. Two ounces of clear fluid were withdrawn, and a pad applied with elastic pressure. When the bandage was removed in twelve hours the hernia had returned to its original size, that of a small orange. The tapping was repeated seven times in October and November, but as no permanent result was determined, it was discontinued. The ulceration healed under boracic dressings.

The condition since November has remained the same, except for some gradual improvement in the general health.

Present Condition. March 1911.—There is nothing in the appearance or demeanour of patient to suggest any trace of disease. Occasional flushing of the face and more especially of neck, are noticeable. The general physical condition is excellent ; weight, 10 stone 7 lbs. (this is heavier than she has ever been, even before operation).

Mentality perfect. Memory unimpaired, excepting as regards the three months after operation, which still remain an absolute blank.

The hernia remains of the same size, altering slightly from day to day. Occasional marked increases of tension cannot be traced to any definite cause, but seem to occur more especially after any mental excitement. The swelling is completely covered by a toupee, and no protective cap is worn. Occasionally slight ulceration of the sac occurs, but has always healed under appropriate dressings. There is frequently slight pain, and constantly some tenderness round the hernial margin.

Eyes.—Sight is perfect. Eye movements normal in all directions, no squint. A small opacity still remains at lower margin of left disc, otherwise the fundus is normal on both sides.

Arms.—There is no difference in appearance or measurement on the two sides. Dynamometer registers the same in each hand. The left hand is constantly colder than the right, and obvious spasmodic pallor is still noticed at times. The left radial pulse is constantly smaller than the right.

Sensation.—Pain and thermal sensation are unimpaired. Tactile sensation is slightly impaired in the finger tips, light touches being appreciated with difficulty. Otherwise normal.

Astereognosis has remained absolute and permanent; in the left hand patient cannot distinguish any object without looking at it. Cannot even distinguish between round and square, hard and soft. Drops articles out of left hand.

Muscular sense unimpaired.

Legs.—No weakness, measurements equal on the two sides. Sensation unimpaired. Knee jerks equally exaggerated. Plantar reflex flexor.

Gait.—No noticeable weakness or defect in walking except when tired, when the left leg drags a little.

General Condition.—For the last nine months patient has been leading a practically normal life. The services of a nurse have been required chiefly on account of the hernia. She is able for all quiet occupations and amusements, but is very easily tired. She can now walk about a mile easily, but cannot stand for any length of time without becoming dizzy and faint. This liability to dizziness passes off as soon as she sits down. She tires quickly sitting in a straight chair. She can motor for over fifty miles without fatigue, but does not stand train journeys well, the vibration being unpleasant. She feels the cold very badly, especially in left hand. This extreme coldness makes the hand at times quite useless. She suffers from dull headaches, which are never severe and which are becoming less frequent. There is constantly some discomfort round the margins of the hernia. Six weeks ago she had a slight attack of influenza, from which she rapidly recovered. The only other complaint is of rheumatic pains in both knees, from which she suffered long before the operation.

All the symptoms from which patient now suffers—pain, headache, dizziness—are traceable to the presence of a large cerebral hernia.

The only pathological conditions resulting from the destructive effects of the tumour before operation, and from the operation itself, are—

(i) Pallor and coldness of the left hand and arm, due to obvious arterial spasm.

(ii) Permanent absolute astereognosis in the left hand.

These two symptoms may therefore be definitely associated with a lesion in the post-parietal convolution of the opposite side.

**NOTES ON A FAMILY OF "MYOTONIA ATROPHICA"
AND EARLY CATARACT, WITH A REPORT
OF AN ADDITIONAL CASE OF "MYOTONIA
ATROPHICA."**

By J. GODWIN GREENFIELD, M.B., Ch.B.

(With Plate 3.)

THE occurrence of "myotonia atrophica" in several members of a family is undoubtedly a feature of the disease. Families in which two or three members of the family were affected have been reported by several authors, but no report seems to have been published in which the disease attacked so many members of the family as in the present instance. For this reason alone the following cases appear to be worth reporting, and the occurrence of double cortical cataract, developing early in four members of the family, renders the family history the more interesting. The similarity in mode of onset and nature of the myopathy, and the fact that both myopathy and cataract set in about the same age in all except one of the members affected, are also instructive, and suggest that the causes of the two conditions may be in some way related.

Lange has reported a case of a family in which three children developed myopathy in the first year of life and double

cataract in the third year. Although he classes his cases under the Werdnig-Hoffmann type of progressive muscular atrophy in children, this diagnosis is not proved by post-mortem findings, and, on a clinical basis, the cases seem to fall into one of the groups of myopathy rather than myelopathy. This family history lends weight to the supposition which a review of the present cases must suggest, that the degenerative conditions in lens and muscles may be due to a deficient vitality on the part of the tissues of the body, showing itself in these somewhat specialised structures. In the present family there is a history of members of previous generations having been afflicted with cataract, but at a more usual age; but no case of myopathy or myotonia was known to have occurred in previous generations, although such has been reported by Batten and Gibb in other cases of the affection.

The first member of the family whom I examined, Le. S., was seen by me in the National Hospital for the Paralysed and Epileptic, in August 1910, when she was admitted under the care of Dr Batten, to whom I am much indebted for permission to publish the case, and for help in the examination of the other members of the family.

At that time she knew of only one other similar case in her family, C. S., who had been shown along with herself, by Dr Turney, at a meeting of the Neurological Section of the Royal Society of Medicine, in March 1910. She had been subject to headaches for some years, but these had been relieved by wearing glasses; otherwise she had enjoyed good health until fifteen months before admission. At that time, April 1909, when aged 32, she had noticed weakness in bending the left elbow. When she tried to lift anything with her left hand the arm straightened, and she could not bend it. There was also at this time some weakness in moving the arm away from the side at the shoulder-joint. Very soon afterwards she noticed some weakness of the thumb and index finger of the right hand. She did not find any difficulty in writing, but could not hold a knife firmly for cutting bread and butter, etc.

A short while after, weakness of the legs was noticed, in that the knees used to bow outwards when she walked, and she noticed some wasting of the muscles of the thighs. After this, wasting of the muscles of the leg came on, and in walking her

feet tended to flop on the ground. She also had a tendency to "go over on the left ankle" in walking. Wasting of the arms and forearms and weakness of the grasp developed subsequently. She did not feel any weakness of the back or neck, but had always had some scoliosis. She thought that her face was thinner in the cheeks than it used to be.

Her general health was good.

On examination she presented a fairly marked myopathic facies. The eyes were expressionless, the lower lids being weak, and drawn somewhat down; and there was some conjunctivitis and blepharitis due to the lagophthalmos. The mouth was weak, and usually slightly open, presenting the form of "bouche-de-tapis." She was unable to whistle. The cheeks were thin, and there was weakness in closing the jaw. The voice was nasal in character, as was observed in other members of the family, but there was no deficiency in movement of soft palate or vocal cords. The neck was thin, and the sterno-mastoids very much wasted and weak, so that on inclining the body backwards the head fell back, and she was unable to prevent its doing so. This weakness of the neck was also very marked when she attempted to rise from a lying position. There was no marked wasting of the upper part of the trapezius and the tongue showed no weakness or wasting.

The upper limbs showed great wasting of both upper arms, and to a less extent in the deltoids, pectorals, and lower part of the trapezius and the latissimus dorsi muscles. The pectoralis major on the right side consisted merely of the clavicular portion; on the left side all the muscle was present, but thin and wasted.

There was also wasting along the inner side of both forearms, and in the hypothenar eminence.

The infra-spinati on both sides seemed unduly prominent.

On voluntary effort greatest weakness was observed in flexion at the elbow-joints. She was completely unable to flex the elbows, and when the forearms were lifted up they could not be kept in that position, but fell by their own weight, causing hyper-extension at the elbow-joints.

The arms could be abducted from the sides to the full extent, but weakly. Adduction of the arm forwards was weak on both sides, especially the right. Adduction downwards was performed

with fair power. Some winging of the scapulae could be produced by passive movement of the arm against resistance, but this was not very marked.

There was slight weakness of the flexion of the fingers, and considerably more of extension of the fingers, and dorsiflexion of the wrists. Opposition of the little finger was weak in both hands, but movements of the thumb and fingers were otherwise normal. There was very slight delay in relaxing the grasp of the left hand, more noted when the arms were cold.

There was no weakness of the back or abdominal muscles, and no marked wasting was noted.

Movement at the hip joints was good in all directions.

Extension of the knees was weak, especially on the left side, and the thighs showed some wasting of both internal and external vasti.

The legs were thin, and seemed especially wasted in the anterior tibial and to a less extent in the peroneal groups of muscles.

Dorsiflexion at the ankles was very weak, especially on the left side. In the right leg it was accompanied by some eversion of the foot. Plantar flexion at the ankle joints was very weak, especially on the left side. Movements of the toes were fairly well performed.

No fibrillary tremor was seen in any of the affected muscles. There was no inco-ordination of movement other than was explained by the muscular weakness. The deep reflexes of the upper limbs and the jaw jerk were abolished. The knee jerks were brisk and undiminished, and the ankle jerks considerably diminished. The superficial reflexes were unaltered.

There was no affection of sensibility, and no loss of joint sense was observed. The gait was somewhat abnormal. She walked with a slight swinging at the hips, and lifted the feet, especially the left foot, rather higher than normal. The feet were brought down to the floor in a slapping manner.

The electrical reactions showed considerable reduction to faradic stimulation in the affected muscles, but no reaction of degeneration. No myotonic reaction was observed.

The nervous system otherwise showed no change, and the physical condition was good.

There was no sign of cataract, but a considerable degree of

hypermetropic astigmatism was present. There was some conjunctivitis and slight blepharitis marginalis.

C. S., aged 38, the brother who is mentioned above, was seen by me at the Western Ophthalmic Hospital, through the kindness of Mr Batten. He had noticed weakness of the right hand and wasting of the muscles of the forearm four years previously, and the arms had become progressively weaker since. No weakness of the lower limbs or alteration of gait had been noticed, nor any difficulty in relaxing his grasp. He had developed conjunctivitis followed by corneal ulceration some weeks previously, for which he was under treatment.

He presented a similar myopathic facies to his sister. The eyes could only be closed with great difficulty, and were easily opened against his strongest resistance. The mouth was weak, showing a tendency to the "bouche-de-tapis" form. He could whistle, but with difficulty. The right risorius and levator anguli oris muscles were decidedly weak. The forehead could be wrinkled, but weakly. There was some weakness of the masseters and temporals, and the buccinators were certainly weak, the cheeks puffing out when he tried to whistle.

The voice was nasal, but the soft palate moved well.

The sternomastoids were very weak and wasted, and on leaning backwards the head fell back of its own weight. The right sterno-mastoid was only represented by a thin thread of muscle, and the left was scarcely less wasted. The head could be turned to either side, but could be easily brought back to the normal position against the strongest resistance by the patient. The trapezius showed no weakness or wasting in its upper part.

The tongue showed no weakness or wasting. In the upper limbs wasting was most marked in the muscles of the forearm. The supinator longus, especially on the left side, was very thin and weak, so that it scarcely contracted at all on forcible flexion of the elbow.

There was also some wasting along the ulnar side and the back of the forearm. Flexion of the fingers and wrist was weak, and extension of the fingers so weak that the fingers could be flexed up without difficulty against the patient's strongest resistance.

No wasting of the small muscles of the hands was present, nor any difficulty in finger movements.

Except for some wasting of infra- and supra-spinati, and slight wasting of the muscles of the upper arm, there was no evidence of affection of the other muscles of the upper limbs.

The back and abdominal muscles were strong.

In the lower limbs, extension at the hip joints was weak, and associated with considerable wasting of the glutei. He showed some difficulty in raising himself at the hips or in rising from a stooping posture.

The thighs showed some flattening over the outer side over the vastus externus, and the vastus externus was also slightly wasted. Very slight weakness of extension of the knee was noted. There was little obvious wasting of the legs, but dorsiflexion of the foot was weak, and the tibialis anticus on both sides contracted poorly. The peronei also seemed to be weaker than normal.

There was quite definite delay in relaxation of the grasp, more noted in the left hand than the right, and also slight delay in relaxing flexion of the elbow joints. There was no change in the deep reflexes, except diminution of the supinator jerks.

His condition was otherwise normal.

La. S., aged 30, sister of the above, was seen by me at the National Hospital in January 1911.

She had noticed, about six months previously, some weakness of the lower limbs, and once or twice when out walking her knees had given under her and she had fallen down. Her sister said that she had, for about two years, been clumsy with her hands; in lifting a teapot her wrist would turn outwards so that the tea was spilt. Within the last few months it was noticed by her sisters that her left foot "flopped on the ground" when she walked. She had always been weak in the arms, and never able to lift any heavy weight. Since childhood she had slept with her mouth open and her eyes half open. Recently she had had a tendency to lachrymation on looking fixedly at anything.

About a month previously she had found that she was blind in the left eye, and this blindness had increased rapidly. She had not noticed any defect of sight of the right eye.

On examination she presented a somewhat similar facies to her sister Le. S. The face was expressionless owing to the lagging down on the lower eyelids and weakness of the musculature of

the mouth. The eyes could not be closed tightly and could be opened against her strongest resistance with great ease. The musculature of the forehead was very weak indeed. The orbicularis oris and risorius were very weak. She could not whistle, although she could purse up her lips fairly well. The masseters seemed rather wasted and very little temporal muscle was present, but no great weakness of chewing or biting movements was present. No weakness of the buccinator was noted. There was not so much arching of the palate as in her sister, and the voice was less nasal. The soft palate moved well. The sterno-mastoids had fair volume in the upper part, but little strength on movement. On sudden forced inspiration the lower ends of the sterno-mastoid muscles (which were only represented by thin strands) were sucked backwards and downwards with the supra-sternal and supra-clavicular fossæ in such a way that the muscles could not be seen at all. Forward movement and rotatory movements of the head were decidedly weak.

There was no evidence of weakness or wasting in any of the muscles affecting the shoulder joint or of the trapezius.

There was weakness of flexion of the left elbow associated with want of action of the supinator longus, which was much wasted. Supination of the left wrist was weak, but pronation, flexion and extension were of normal strength, as also were the grasp and finger movements. On grasping any object tightly in the hands there was a distinct delay in letting go. This was more noticeable in the left hand than the right, and was not associated with any weakness of extension of the fingers.

There was no evidence of weakness of the muscles of the trunk. She could rise from a stooping posture quite easily.

In the lower limbs the only noticeable weakness was in dorsiflexion of the feet, which was considerably weaker on the left side than the right. On attempt at dorsiflexion of the left foot, the foot was drawn up everted by the peronei, and a distinct hollowing over the tibialis anticus was noted when this movement was performed. Neither leg showed any marked wasting, but the left leg was distinctly thinner than the right, the measurements round the calf being on the right side $12\frac{1}{2}$ inches, on the left side 12 inches.

The thighs showed no weakness or wasting. All the deep reflexes were active. In walking she lifted the left foot a little

higher than the right, and brought it to the ground in a markedly flapping manner.

Mr Leslie Paton examined the eyes, and reported as follows :—

Right eye.—Vision = $\frac{6}{18}$. Early diffuse haze with cortical striae in the lens.

Left eye.—Vision = fingers at 1 foot. Nearly ripe cataract. No fundus reflex.

F. G. S., æt. 28, sister of the above patients, was seen by Dr Wilfred Harris on 27th January 1911, and subsequently by myself at the National Hospital on 20th February. She complained chiefly of neuralgic pains in the neck and head, coming on every fortnight. No eye condition was discovered to account for these. For the past year she had noticed weakness of the left ankle, which became stiff and cold at times.

On examination she presented none of the myopathic facies of her sisters, could whistle and close the eyes firmly. The sterno-mastoid muscles were strong and did not seem wasted. There was no loss of power of the arm movements, and the musculature of the arms was good. There was no delay in relaxing the grasp nor myotonic reaction to electric stimulation.

In the lower limbs the only abnormality was some weakness in dorsiflexing the left ankle, owing to weakness of the tibialis anticus, but no eversion of the foot occurred in attempting this movement. There was very little obvious wasting of the muscles of the anterior tibial group, and both legs and thighs were strong and well formed. Electrical reactions of the muscles of the leg were of the normal type.

All the deep reflexes were present. The plantar response was flexor on both sides. Her gait was almost normal, but slight "clumping" of the left foot on the ground was noted when she walked in shoes. Without her shoes no abnormality could be detected.

It seemed probable that this was an early case of the same type of myopathy as affected the other members of the family, but apart from the family history it would have been impossible to diagnose the case as such.

Mrs E. H., æt. 32, was seen by me on 4th March 1911.

She had for about ten years noticed weakness of the grasp and of the wrists, especially when she held anything in her hands with the palms upwards. Thus in carrying plates it was necessary for her to carry the plate on the front of the wrist, otherwise she could not avoid spilling the contents. She had noticed some weakness of the neck and difficulty in raising the head when rising from bed. Neither of these affections had progressed noticeably in the last five years.

About three years ago she had noticed the sight of the right eye dim, and the eye had been rather red and inflamed. She had developed cataract in it, and also some corneal opacity. The left eye was also considerably affected at that time, but recovered completely under proprietary treatment.

She had been married ten years, but had no children.

On examination she presented a facies somewhat similar to her sisters, Le. S. and La. S., but there was rather more firmness about the eyes, which could be closed fairly tightly. The cheeks were very sunken from wasting of the masseters. There was an absence of the normal expressional play of the mouth, but no very marked weakness of the mouth muscles. She was able to purse her lips fairly well, but could not whistle.

There was very considerable weakness of the sterno-mastoid, and these muscles were very thin, but this atrophy was not nearly so marked as in Le. S. and La. S. On leaning backwards she could support her head, but with difficulty, and had extreme difficulty in bringing the head forward after having let it hang back. There was no weakness of the muscles of the shoulder girdle or upper arm. The supinator longus was weak, but not much wasted. The forearms presented a curious appearance, owing to almost complete atrophy of the deep flexor of the fingers. The musculature on the front of the forearm ceased abruptly about midway down its length, and below this the radius and ulnar lay just below the skin, almost totally devoid of muscular covering. Flexion of the wrist and fingers, especially at the terminal phalangeal joints, was very weak. The musculature of the back of the forearms and of the hands showed no wasting.

There was no weakness of any movement except flexion of the wrist and fingers. No myotonia was noted, either in the flexors or extensors of the fingers.

The musculature of the trunk and the lower limbs appeared normal.

There was no abnormality of gait. The deep reflexes were all present.

Examination of the eyes showed a fairly dense cataract involving the whole surface of the lens of the right eye. The lens of the left eye was normal, and the fundus showed no change.

Both pupils reacted to light, the right only slightly. Vision in the right eye was little more than light and dark. In the left eye vision appeared to be good.

The complete family history, as far as could be ascertained, is as follows :—

The father, W. S., æt. 67, was normal.

The mother, I. F., died of cancer, æt. 58 ; was otherwise healthy.

The father's mother had cataract at the age of 60, and the father's sister, æt. 69, had cataract in both eyes.

The father's mother's sister was born blind.

No case of myopathy was known of in either the father's or the mother's family.

The present family is composed as follows :—

1. E. S., female, æt. 47, normal.

2. G. S., male, æt. 45, developed double cataract when thirty years old.

3. W. S., male, æt. 45, normal.

4. Mrs C., æt. 42, had neither cataract nor myopathy, but her left eye showed a large area of colloidal degeneration of the membrane of Bruch at the macular region.

5. V. S., female, developed cataract at the age of twenty-two. The condition developed very rapidly after some febrile disturbance, and there seemed to be some irido-cyclitis in addition to the cataract. The operation was performed by Mr Lang, but was unsuccessful. She had, when seen by me, phthisis bulbi in both eyes, with only perception of light and dark. Otherwise she was healthy.

6. C. S., male, æt. 38, has myopathy (v.s.). His son, æt. 10, was said to be mentally backward, but as far as could be ascertained, showed no signs of myopathy or failure of vision.

7. H. S., female, æt. 37, normal.

8. L. S., female, æt. 34, has myopathy (v.s.).
9. A. S., male, æt. 32, normal.
10. Mrs H., æt. 32, developed cataract at twenty-eight, and has myopathy (v.s.).
11. L. S., female, æt. 30, has recently developed cataract in both eyes and has myopathy (v.s.).
12. F. G. S., female, æt. 28, seemed to be commencing to develop myopathy (v.s.).
13. A. S., male, æt. 25, normal.

Owing to the comparative rarity of the disease "myotonia atrophica," or at any rate the small number of cases of this disease published, it may be worth while to record another very typical case.

This patient, J. C., æt. 33, came under the care of Dr Ormerod, at the National Hospital for the Paralysed and Epileptic, in January 1911.

He had been seen and treated for some years at the West London Hospital previous to his admission to the National Hospital.

The history of his disease dated back nineteen years, as he said that at the age of fourteen his arms became much weaker, and he had special weakness of the grasp of both hands. Soon after this he noticed considerable wasting in the muscles of the upper arm, but no fibrillary tremor was seen in the affected muscles.

For about fifteen years this weakness and wasting of the arms were the only symptoms, and progressed very slowly indeed.

About four years before admission his legs became weak, and he felt as if they gave way at the knees, and he noticed wasting of the calves of the legs and the thighs. He thinks that his calves wasted before his thighs, but the first weakness he noticed was that the knees gave way under him.

He used to scrape his feet along the ground when he walked, and became tired very quickly, even after a few hundred yards, and used to fall down frequently when out walking.

For about eighteen months he had noticed that his hands often became fixed with his fingers in a flexed position, and he had difficulty in relaxing his grasp, so much so that he had to use the other hand to loosen the fingers from his fork or knife at table. For about twelve months he had had considerable

difficulty in buttoning his clothes, more noticeable when his hands were cold, and was seldom able to do such movements so well as formerly.

For the last four or five years he had been unable to whistle, although previously fond of whistling.

He had not noticed any change of speech, and was able to close his eyes quite well.

He knew of no case of muscular weakness or wasting in his family.

On examination he showed considerable weakness and wasting of all the facial muscles. The eyes could be easily opened against the patient's resistance, and he could not purse his lips up with any force.

There was considerable weakness and wasting of the muscles of the jaw, so that he could not bite a finger sufficiently hard to cause any pain.

The sterno-mastoid muscles on both sides showed very great wasting, being only visible as a thin, ribbon-like strand at the side of the neck. On leaning backwards his head fell back (as in the other cases of myotonia atrophica described), and he could not hold it up. Movements of the neck forward and to the side and rotatory movements were also weak.

The trapezius showed no weakness or wasting, and all the shoulder girdle muscles were of good volume and strong, except that some winging of the scapulæ could be brought about by passive movements against resistance.

The muscles of the upper arm showed extreme wasting, and their function was much impaired. Flexion of the elbow was stronger in the right arm than the left, extension stronger in the left arm than the right.

All the muscles of the forearm also showed very considerable wasting, and their power was much diminished.

The supinator longus was only represented by a thin, flabby band, which scarcely contracted at all. Although extension of the wrist and fingers was weak, it was fairly easy for him to straighten out his fingers briskly, but after a forcible attempt to grasp any small object, or after clenching his fists, he had great difficulty in straightening out the fingers, and this was noted to be due to spasm of the flexor muscles of the fingers. This was brought out very well on tetanising the flexor muscles with



FIG. 1.



FIG. 2.

To illustrate Dr Greenfield's Paper.

faradism, for when the current was stopped the flexion continued, gradually relaxing for over ten seconds.

Except for wasting of the hypothenar eminence in both hands, and weakness in opposition of the little finger, there was no affection of the intrinsic muscles of the hands. Possibly abduction of the thumb was weaker than normal.

In the lower extremities considerable wasting of all the muscles below the knee was observed. This chiefly affected the peroneal group, but the anterior tibial group, and the flexors of the toes, gastrocnemius and soleus were also affected. All movements of the ankle-joint were weak, and on attempt at dorsal flexion of the foot inversion occurred owing to weakness of the peroneal action.

The vastus externus also showed considerable wasting, and extension of the knee-joint was very weak.

There was little if any affection of the glutei and trunk muscles.

All the deep reflexes were absent, even on reinforcement. The superficial reflexes were brisk and of the normal type.

The gait was somewhat slow; the feet were lifted rather high and slapped down on to the ground. There was no swaying at the hips and no unsteadiness in his gait.

Except for complete absence of the sense of smell he showed no other abnormality of the nervous system.

In conclusion I should like to express my thanks to Dr Batten and Mr Leslie Paton for their help in examining the patients, to Mr Nettleship, Mr Lang, and Dr Wilfred Harris for their notes on cases, and to Dr Ormerod for permission to publish the last recorded case.

LITERATURE.

1. Batten and Gibb. *Brain*, 1909, Part cxxvi.
2. Turney. *Proc. Roy. Soc. of Med.*, Clin. Sec., 1910.
3. Lange. *Deut. Zeit. f. Nerven.*, Bd. 40, 1910.

DESCRIPTION OF FIGURES.

- Fig. 1.—Le. S. Showing myopathic facies and atrophy of sterno-mastoids.
- Fig. 2.—J. C. (1 sec. exposure) on attempt to relax grasp and straighten out the fingers. He is attempting to drop a rod held in his hand.

Abstracts

ANATOMY.

ON THE RELATIONS OF THE LYMPHATICS OF THE SPINAL

(170) **CORD.** ALEXANDER BRUCE and J. W. DAWSON, *Journ. Pathol. and Bacteriol.*, Vol. xv., 1911, p. 169.

THIS paper, which is illustrated by two coloured plates and seven figures, considers the still disputed and important question of the relation of the lymphatics of the spinal cord to the blood vessels. The methods of study specially adopted were the examination of the normal tissues under various modes of fixation, to demonstrate the effects of shrinkage, and the staining by Marchi's method of the compound granular corpuscles in the various conditions which lead to their formation in such amount as to cause a natural injection of the lymphatics.

The conclusion at which the authors arrive is, that there is no perivascular lymphatic space between the outer lining membrane of the vessel and the special nervous tissue, *i.e.* that there are no perivascular or epispinal spaces such as described by His and Obersteiner, and that the one and only lymphatic channel is contained within the adventitia of the blood vessel along which it passes from the smallest capillaries towards the periphery of the cord, to debouch into the deeper layers of the pia.

AUTHORS' ABSTRACT.

THE NERVES AND NERVE-ENDINGS IN THE MEMBRANA

(171) **TYMPANI IN MAN.** GORDON WILSON, *Amer. Journ. Anat.*, Jan. 1911, p. 101.

THE only previous account of the nerve distribution in the human membrana tympani was published in 1872 by Kessel. With the improvement since that date in the technique for nerves and nerve-endings, the author of this paper has been able to carry out a much more thorough and accurate investigation of the subject. The paper, which is illustrated by six drawings, gives a description of the technique employed and an account of the results of the investigation. These results are shortly as follows:—

1. The main nerve supply is from nerves entering from the external auditory meatus.

(a) One large trunk, along with the principal artery, whose fibres ultimately radiate towards the periphery.

- (b) Numerous small branches entering round the periphery, which form a distinct "zonular" plexus.

The fibres from these two sources form a plexus in the fibrous tissue from which branches are distributed to a sub-epithelial and a sub-mucous plexus. An intra-epithelial plexus can also be distinguished.

2. There are also nerves, fewer in number, from the plexus tympanicus, which enter the membrane from the tympanic cavity, and which ultimately join the plexus in the fibrous tissue and the sub-mucous plexus.

3. The blood vessels are well supplied with vasomotor nerves.

4. Only one variety of nerve-ending is seen in the epithelium, namely, fine or possibly bulb-pointed. In the fibrous tissue, both sub-cutaneous and sub-mucous, there are found nerve arborisations; at the periphery modified Vater-Pacinian corpuscles are present.

5. No ganglia are to be seen.

6. The nerve supply is derived from the auriculo-temporal and the vagus.

7. The sensation produced by lightly touching the membrane is pain.

JOHN M. DARLING.

THE BLOOD SUPPLY OF THE PITUITARY BODY. W. E. DANDY (172) and EMIL GOETSCH, *Amer. Journ. Anat.*, Jan. 1911, p. 137.

THIS inquiry was undertaken in order that light might be thrown upon certain operative experiences in connection with the pituitary body. The animals chosen for the inquiry were dogs which were injected immediately after death, the best injection results being obtained by a 10 per cent. gelatine mass with carmine or vermilion for the veins and capillaries, and prussian blue or ultramarine for the arteries.

The anterior lobe is supplied by arteries from all parts of the circle of Willis, but mainly from its anterior half. They converge upon the stalk and break up into capillaries which open into the large and numerous sinusoidal channels traversing the anterior lobe and separated from the gland cells merely by their endothelium. From these channels venous capillaries arise and form veins in the stalk from which collecting vessels radiate to the basilar circle of veins overlying the circle of Willis.

The pars intermedia gets its arteries from those of the stalk, of the adjacent brain substance, and of the posterior lobe. The venous return is upwards into the veins of the stalk and backwards ultimately into the circular sinus.

The posterior lobe is supplied directly from the internal carotid arteries, and one large and two smaller veins leave it to end in the circular sinus.

The "parahypophysis," a hitherto undescribed structure found under the pituitary during these investigations, is supplied from the internal carotid arteries directly and from their branches to the posterior lobe. A small vein leaves it and enters the bone on which it lies.

E. B. JAMIESON.

RESEARCHES ON THE NATURE OF THE PRIMARY STAINING
(173) **OF NERVOUS TISSUE.** (*Ricerche sulla natura della coloribilit  primaria del tessuto nervoso.*) C. BESTA, *Riv. di Freniat.*, Vol. 36, Fasc. 1-2, p. 53.

THE author gives an account of the whole question of the primary staining of nervous tissue. This, according to Bethe, is due to a special substance of an acid nature having the power to fix basic dyes (fibrillar acid). This substance is united closely during life with the substance of the nerve fibrils, but becomes partly dissociated after death. The fibrillar acid is less closely bound in the peripheral nerve structure than in the central nerve elements. It is supposed to be liberated after death by a secondary hypothetical substance. Lugaro has repeated the experiments of Bethe, and considers that the primary staining is due to an acid substance which he calls the substance of Bethe, but considers that this is free during life and not set at liberty by the intervention of a second substance. Moreover, Lugaro and Bethe have shown that in addition to this substance there exists a secondary basophil substance in all nervous elements. Horber and Auerbach combat the views of Bethe and Lugaro, and consider that the primary staining is due to an alteration of the colloidal state of the nerve elements. Apparently both these authors regard the acid fibrillary substance as non-existent and the primary staining as resulting from colloidal precipitation.

Besta considers the experiments of Horber to be insufficient. Against the conclusions of Auerbach he contends that if the primary staining were due to physical factors on causing two solutions to act successively on nervous tissue, of which the first preserves and the second destroys the primary staining capacity, a neutralisation of the staining should take place. From experiments done with this idea, he concludes—

1. The primary staining of nervous tissue is due in all probability to the existence of a special substance having the power to fix basic dyes, which may be called the free substance of Bethe.

2. Hydrochloric and nitric acids have the power to confer on nervous tissue a secondary slight colorability to some basic dyes.

3. This secondary colorability is also due to a special substance to be found in nervous tissue, but which is not to be identified with the free substance of Bethe.

4. The assertions of Auerbach, both with regard to the primary and the secondary coloration cannot be confirmed.

F. GOLLA.

THE STAINING OF NERVE FIBRES IN CELLOIDIN SECTIONS (174) WITH IRON-HÆMATOXYLIN AFTER FIXATION IN FORMALIN. (Coloration des Fibres Nerveuses par l'Hématoxyline au fer après fixation au formol et inclusion à la Celloidine.) M^{lle}. LOYEZ, *Rev. Neurol.*, T. xx. 2, p. 666.

THE obvious disadvantages of the prolonged chrome-mordanting, necessary for the staining of the medullated sheaths in the Weigert-Pal method, led to the use of ferric alum as a mordant with frozen sections (*cf.* "The Staining of Medullated Sheaths in Frozen Sections," *Rev. of Neurol. and Psychiat.*, Vol. viii., 1910, p. 366). The great difficulty in manipulating frozen sections has led the author to adapt this method to celloidin sections from tissues fixed in 10 per cent. formalin. The steps of the process are as follows:—

1. Mordant in 4 per cent. ferric alum—twenty-four hours, then wash rapidly.
2. Stain in Weigert's hæmatoxylin solution—twenty-four hours, then wash in water.
3. Differentiate with 4 per cent. ferric alum till the grey matter stands out clearly, then wash in water and complete the differentiation with Weigert's borax and ferricyanide mixture. Special emphasis is laid on the differentiation in two stages, which avoids the risk of removing the stain from the finer fibrils.

This method enables preparations to be obtained shortly after the autopsy, and also enables sections from the same block to be stained by the different elective methods—an impossibility with chrome-mordanted tissues. The author has obtained celloidin sections thus stained not less satisfactory than similar sections stained by the Weigert-Pal method. The only disadvantages seem to be the deep yellow-grey staining of the cortex which remains after differentiation and the difficulty of applying this method to large brain sections.

JAMES W. DAWSON.

A METHOD OF MOUNTING BRAIN-SECTIONS. (Ein Konservierungsverfahren für Gehirnschnitte.) LIESEGANG, *Zeit. f. Wissensch. Mikroskopie*, Bd. 27, H. 3, 1910, p. 369.

THE author describes a method of mounting large Weigert-stained brain sections in gelatin, which he has found cheaper, less protracted, and more satisfactory than the ordinary method in Canada balsam.

The details are as follows:—A large glass slide is thinly covered with a 5 per cent. solution of gelatin: before this layer becomes firm, the stained and differentiated section—taken from lukewarm water by means of paper—is laid on it. Possible air bells are removed by gentle pressure sideways over the paper, which is then removed. The gelatin is allowed to set for two minutes, when it is covered with a pretty thick layer of gelatin: this is left at room temperature for a day to completely dry, and then is varnished over with "Spritt Weiss." Such preparations do not seem so clear, but are as serviceable as those mounted in balsam. Special precautions are necessary to prevent cloudiness and false pictures, which may be due to insufficient covering with gelatin or the irregular refraction of light from an uneven surface.

JAMES W. DAWSON.

PHYSIOLOGY.

THE FUNCTION OF CHOROID PLEXUSES OF THE CEREBRAL VENTRICLES AND ITS RELATION TO THAT OF THE PITUITARY GLAND. KRAMER, *Journ. Amer. Med. Assoc.*, Jan. 28, 1911, p. 265.

THIS paper gives a short account of the results obtained by the writer by intravenous injection into the dog of extracts prepared by rubbing up the choroid plexus of another dog in 2 c.c. of normal saline solution (ten experiments). This was followed by a fall in blood-pressure, preceded occasionally, though not constantly, by a slight momentary rise. The writer thought that in certain cerebral affections there might possibly be an excess of such depressant substances in the cerebro-spinal fluid, as the choroid plexuses are the secretory organs for the cerebro-spinal fluid, and he found that a marked and prolonged fall in blood-pressure followed the injection into a dog of extracts obtained by lumbar puncture from such patients. He further considers that the depressant effect of this secretion from the choroid plexuses is antagonistic in its action to that obtained from the infundibulum

of the pituitary body. He states that on injecting a mixture of pituitary extract together with an extract of human choroid plexus he obtained a transitory depressant action, succeeded by a rise in pressure due to the pituitary. He therefore concludes that these two principles which pass into the cerebro-spinal fluid have a tendency to counteract each other, so far as their effect upon the circulatory apparatus is concerned. A. NINIAN BRUCE.

**ORIGIN AND COURSE OF VASO-MOTOR FIBRES OF THE
(177) FROG'S FOOT.** J. N. LANGLEY, *Journ. Physiol.*, Jan. 27, 1911.

Method.—The spinal nerves, or nerve roots, were stimulated after partial or total destruction or removal of the central nervous system, and the resulting constriction of the vessels of the web was observed.

Certain facts have to be taken into account. First, the vessels are liable to contract spontaneously, or to contract or dilate reflexly, as the result of cutaneous stimulation. Secondly, each nerve does not necessarily supply every artery. Thirdly, vaso-constriction may be prevented by fatigue or by excess of curari.

Results and Conclusions.—The vaso-motor fibres were found to leave the cord in the 3rd to the 7th spinal nerves, and to pass to the sympathetic chain by the rami communicantes. The number of vaso-motor fibres in each nerve increased as one passed down the series, but the 7th nerve had sometimes fewer than the 6th.

Thence the fibres passed by the rami communicantes of the 8th and 9th spinal nerves to the sciatic nerve, to be distributed to the foot, where the two nerves overlapped considerably in their distribution. This corresponds with the sensory supply of that region.

None of the vaso-motor fibres accompanied the arteries to the leg. There was found no evidence of vaso-dilator fibres to the web: the vaso-dilation produced is probably passive, and due to the increased rate of the circulation.

Stimulation of the posterior root of the 7th spinal nerve produced no vaso-constriction. J. CRIGHTON BRAMWELL.

PHARMACOLOGICAL STUDIES ON THE PHOSPHATIDS. *Journal*
(178) *of Pharmacology*, Dec. 1910, pp. 239-269.

1. **Methods for the Study of their Combinations with Drugs and other Substances.** By W. KOCH.
2. **The Relation of the Phosphatids to the Sodium and Potassium of the Neuron.** By KOCH and PIKE.

3. **The Relation of the Phosphatids to Overton and Meyer's Theory of Narcosis.** By KOCH and M'LEAN.
4. **The Relation of Brain Phosphatids to Tissue Metabolites.** By KOCH and WILLIAMS.
5. **The Function of Brain Phosphatids in the Physiological Action of Strychnine.** By KOCH and MOSTROM.

THESE papers by Koch and his colleagues may be considered together. They form a foundation for the study of the fundamental changes brought about in the chemical constituents of the cell by drugs, and of those constituents chiefly the lecithins and kephalins obtained from the nervous system have been employed in these researches. The method used for the most part was a physico-chemical one, the principle of which consists in the estimation of the state of colloidal aggregation, or the relative size of the particles, of a given phosphatid by the measurement of its sensitiveness to precipitation by standard calcium chloride solution.

It is possible here to give only a brief summary of the author's conclusions, though the importance of research in this direction for the elucidation of the most essential problems underlying pharmacology and pathology alike cannot be overestimated. The following are the chief propositions which have been arrived at:—

The greater concentration of potassium in the cells of a tissue as compared with the surrounding lymph spaces or serum can be in part accounted for by the specific affinity for this element of some of the phosphatids, especially kephalin.

There is no evidence that anæsthetics or hypnotics produce changes in the state of aggregation of lecithin or kephalin, which are sufficiently consistent to account for such a general phenomenon as narcosis. There is some evidence, however, that chloroform, as distinguished from pure ether, has the power to form a combination with lecithin, a phenomenon which may be brought into relation with its slow elimination and consequent tendency to produce delayed poisoning.

Of the tissue metabolites, ammonia and bile salts especially possess the power of altering the physical state of aggregation of lecithin to such an extent as to allow the conclusion that they can be of functional significance in altering the permeability of cell membranes.

Strychnine is taken up by the spinal cord on account of its affinity for lecithin and kephalin, and it probably combines with lecithin through some relation to the unsaturated fatty acid group of the latter.

J. A. GUNN.

**TRIMETHYLAMINE AS A NORMAL CONSTITUENT OF HUMAN
(179) BLOOD AND CEREBRO-SPINAL FLUID.** C. DORÉE and
F. GOLLA, *Biochem. Journ.*, Vol. v., p. 306.

TRIMETHYLAMINE appears to be a normal constituent of the cerebro-spinal fluid. In very dilute solutions it forms periodide crystals that are impossible to differentiate from those of choline periodide. Since all the other chemical tests for choline are given by trimethylamine, it is not possible to identify choline in the presence of this body, and the same statement may be made as to the alleged presence of choline in blood. To show the presence of choline it would therefore be first necessary to drive off the trimethylamine from the suspected fluid. F. GOLLA.

**ON THE PSYCHOLOGY OF THE CONCENTRICALLY CON-
(180) TRACTED VISUAL FIELD.** PICK. Kongresse für exper.
Psychologie in Innsbruck, 1910.

THE author comments upon the fact that some subjects of functional concentric narrowing of the field of vision are themselves conscious of the nature of the defect, a point which he considers has not received adequate recognition. He is accustomed to elicit the symptom by asking the patient to look steadily in his eye and then to state how much of his figure is visible, each eye being, of course, examined separately. The results are found to be commensurate with perimetric observations. Orientation may also be affected, so that the distinction between the symptoms of functional and of organic concentric restriction of the visual field is not so clear as has been thought. The paper concludes with a plea for further observation. H. M. TRAQUAIR.

**HUNTERIAN LECTURES ON COLOUR VISION AND COLOUR
(181) BLINDNESS.** EDRIDGE-GREEN, *Lancet*, Feb. 4 and 11, 1911.

THE visual purple, which is secreted by the rods and set free from them by the action of light, is the essential factor in vision. The light causes a photo-chemical decomposition of the visual purple which stimulates the cones, probably by the production of electricity, and thus impulses travel to the brain.

The amount of light determines the quantity of the impulse, which is the basis of the sensation of light; the wave-length of the light determines the quality of the impulse, which is the basis of colour sensation.

The actual perception of the colours depends on the development of the retino-cerebral mechanism. The primitive condition may be conceived to be that in which the retino-cerebral apparatus is developed as regards light, but not at all as regards colour—that is to say, rays from different parts of the spectrum cause merely sensations of different intensities of light. This is total colour blindness. Differentiation now begins, and the stimuli which are the first to be separated are those which are physically the most different, namely, those at the two ends of the spectrum, the red and the violet. At a more advanced stage green appears between the red and the violet, and so on, until ultimately the whole spectrum is seen. If the development of the colour-perceiving mechanism stops at the first stage the individual sees two colours only, red and violet, and is a di-chromic, others are tri-, tetra-, penta-, hexa-, and hepta-chronics. Normal colour vision is attained at the hexa-chromic stage.

Thus colour-blindness, as the term is ordinarily used, depends upon retarded or arrested development in the colour-perceiving apparatus.

A number of interesting observations, both objective and subjective, are adduced in support of these views.

The second lecture deals with the more practical subject of the detection of colour blindness. The conditions necessary in a reliable test are discussed, and the author's lantern, classification test, and pocket test are described, together with the methods of using them and the advantages claimed for them.

H. M. TRAQUAIR.

PATHOLOGY.

A LESION OF THE LEFT LENTICULAR ZONE WITHOUT SPEECH

(182) **SYMPTOMS, A CONTRIBUTION TO THE STUDY OF THE APHASIAS.** (*Lésion de la zone lenticulaire gauche sans troubles de la parole, contribution à l'étude des aphasies.*)

A. VAN GEHUCHTEN, *Névrose*, Vol. xi., f. 1, 1910, p. 5.

A CASE of right hemiplegia in a right-handed female who died of intestinal obstruction seventy-four days after the onset of the paralysis, which had persisted without improvement. At no stage in the illness were there any disorders of speech. An area of softening was found in the left hemisphere which destroyed (1) the entire superior part of the external segment of the lenticular nucleus, (2) a large part of the external capsule, (3) the body of the caudate nucleus, and (4) the middle third of the posterior limb of the internal capsule. The lesion was thus situated in

the left "lenticular zone" of Marie, and according to his contention should have produced motor aphasia (*anarthria* of Marie).

A comparison is made with six cases recorded by Moutier in which there were equally extensive lesions of the left "lenticular zone" accompanied by various degrees of *anarthria*: the only uniform lesion in those cases was an involvement of the genu of the internal capsule.

Among the author's conclusions are:—(1) that Marie's contention that any lesion whatsoever in the left "lenticular zone" will produce *anarthria* is not supported by the facts brought to light in this paper; (2) that the aphasia of the cases in question is a conduction or projection *anarthria* due either to central paralysis or to ataxia the result of deficient co-ordination; (3) that transitory *anarthria* associated with extensive lesion in the "lenticular zone" is only due to pressure on the internal capsule, the recovery not being due to the education of a corresponding centre in the right hemisphere.

To definitely solve the problem of Broca's convolution two sets of cases must be studied, viz.: (a) aphasia without hemiplegia, (b) right hemiplegia without aphasia.

A. L. TAYLOR.

**ON THE ANATOMICAL CHANGES INDUCED BY CHRONIC
(183) TOBACCO POISONING.** (*Sulle alterazioni anatomiche indotti dall' intossicazione cronica sperimentale da tabacco.*) P. F. BENIGNI, *Riv. di Patol. nerv. e ment.*, Vol. 15., p. 80, 1911.

THE liquid from tobacco macerated in the cold was used for injection into rabbits and guinea pigs, and the intoxication by small subcutaneous injections covered periods of from three to five months.

The principal anatomical changes may be summarised as follows:—

There is evidence of a slow chronic inflammatory change in the dura mater which is frequently adherent. The pia mater shows a connective tissue hyperplasia with small-celled infiltration. In all cases granular degeneration of the nerve cells of the cerebrum and cerebellum was noted, together with chromatolysis and sclerosis of the cell body. The nerve fibres showed profound fatty changes with complete degeneration of many fibres. In the vicinity of the sclerotic changes there was hypertrophy of the neuroglia. The blood vessels of the central nervous system, together with those of all the viscera, showed marked hyperplasia with sclerotic plaques. Degenerative changes were rare. In the heart, liver, spleen, ovaries and testicles, and thyroid two types of alteration were noted. The one was progressive, and consisted in an enormous development of interstitial tissue, and the other regressive,

manifesting itself as a fatty degeneration of the parenchymatous tissue. In the suprarenal capsules, in addition to the occasional presence of degenerative changes, the most marked feature was a general hyperplasia in response to the intoxication. F. GOLLA.

**NOTE UPON THE EXAMINATION, WITH NEGATIVE RESULTS,
(184) OF THE CENTRAL NERVOUS SYSTEM IN A CASE OF
CURED HUMAN TRYPANOSOMIASIS. F. W. MOTT,
Lancet, Feb. 25, 1911, p. 500.**

THIS case, a Sikh, aged 30 years at death, was found to be suffering from trypanosomiasis in June 1905, and received treatment with inorganic arsenic. This was given intermittently for eighteen months, and pushed till toxic symptoms of neuritis, etc., appeared. Trypanosomes were then no longer found by puncture of the glands. It is not known if they were ever present in the cerebro-spinal fluid; Dr Mott thinks probably not, for if they had been the symptoms of sleeping-sickness would in all probability have come on in spite of treatment by atoxyl. When examined in 1908, 1909, and 1910 he seemed in excellent health. Death occurred from pneumonia in August 1910. Beyond fibrosis and induration of the cervical and inguinal glands there was nothing noteworthy found post-mortem. The brain was quite normal in appearance, and its microscopic examination showed no trace of the characteristic meningeal and perivascular infiltration or gliosis of sleeping-sickness. This case may prove that human trypanosomiasis is curable, but not that sleeping-sickness is. It may be mentioned that the patient contracted syphilis in 1906, and was treated for some time with mercury, a fact which may have some bearing on the case.

J. H. HARVEY PIRIE.

**A CONTRIBUTION TO THE PATHOLOGICAL ANATOMY OF
(185) SOME PSYCHOSES. (Beitrage zur pathologischen Anatomie
einiger Psychosen. Dementia Praecox, senile Psychosen,
Amentiaformen.) WADA, *Arch. a. d. neurol. Instit. Wien.*, Bd.
18, H. 3, 1910.**

THE author commences his paper by making a plea against one-sided psychological studies and also against the undeserved attention which is being given to the complement reaction.

He has investigated the brains of three cases of dementia praecox and one of paranoia with dementia. He summarises his results as follows:—

1. A marked degeneration of the pyramidal and other cells

of the cortex with much vacuolisation ; the changes are much less intense in the large pyramidal cells.

2. Severe injury to the intracellular neurofibrils.

3. No acute degeneration of the nerve fibres ; there is some loss of fibres in the tangential and Baillarger layers.

4. Other changes :—neuronophagy, pigmentation and glial overgrowth ; these are secondary.

5. The presence of small areas of softening ; the importance of these is not known.

6. The changes are most marked in the frontal lobes.

The character of the changes suggests that they are the result of toxic action, and probably are produced by repeated attacks rather than by a progressive morbid condition. The softenings are not due to changes in the vessels but to the action of concentrated toxins.

The author has also examined brains from senile cases and from cases of intoxication, alcohol, uræmia, pernicious anæmia, and acute delirium. The characters of the changes in these cases resemble those found in the cases of dementia præcox, but they are more general. He suggests that observation of the alterations of the parenchyma and of the connective tissues and their localisation will enable us to explain the most different clinical pictures.

R. G. ROWS.

**CONTRIBUTION TO THE PATHOLOGICAL ANATOMY OF
(186) KORSAKOW'S PSYCHOSIS.** E. THOMA (of Illenau), *Allg. Ztsch. f. Psych.*, Bd. 67, Ht. 4.

THE two cases examined showed—(1) diffuse involvement of the cortical nerve cells similar to that in general paralysis ; (2) degeneration of the medullated fibres in the brain ; (3) increase of the neuroglia cells and fibres to replace the medullated fibres.

C. MACFIE CAMPBELL.

**CONTRIBUTION TO THE HISTOPATHOLOGY OF THE SPINAL
(187) CORD IN ARTERIOSCLEROTIC AND SENILE DEMENTIA.**
(Beitrag zur Histopathologie des Rückenmarkes bei der
Dementia arteriosclerotica und senilis.) G. R. LAFORA
(Madrid), *Monatsschr. f. Psych. u. Neur.*, Jan. 1911.

THE material used consisted of six cases, three of senile dementia, three of arteriosclerotic dementia, in which the autopsy took place within fifteen hours after death ; in addition three brains, which had been for several months in formalin, were examined. The

communication is accompanied by four plates. The author sums up his results as follows:—

1. The nerve cells of the spinal cord in arteriosclerotic and senile dementia show the following changes—atrophy, pyknosis, cloudy swelling (central and peripheral), reticular degeneration, pronounced pigmentary and fatty degeneration, central and peripheral tigrolysis and vacuolar degeneration.

2. The intracellular changes of the neurofibrils consist of a mesh-like degeneration and dissolution of the neurofibrils: the extracellular changes consist of swelling in the course of the fibres, terminal clubbing, formation of little balls containing and not containing neurofibrils. No formation of plaques, no corkscrew arrangements.

3. In the medullated fibres: no tract degeneration; thick, round or oval swellings (central amyloid bodies?), structureless swellings, mulberry formations.

4. In the glia: proliferation and degeneration of the glia cells, no neuronophagy, rod-shaped glia cells, caryorrhexis of the glia cells, glia-like granule cells; pronounced increase of glia fibres with very thick fibres, pericellular and perivascular gliosis.

5. Rod-shaped cells are often present. Some contain basophile bodies (degenerative products).

6. As to the vessels: increase of the small vessels, especially in the environment of the nerve cells; packets of vessels; proliferation of the intima and media, sometimes combined with that of the adventitia; very rarely splitting of the elastica; hyaline degeneration; "vessel-polypi"; dislocation and vacuolar degeneration of the endothelial cells; adventitial nuclei staining with pyronin.

7. Many granule cells of ecto- and meso-dermal origin, especially in senile dementia; the granules consist of fat, pigment, protagon, etc.

8. In one case of very doubtful syphilitic origin many lymphocytes and some plasma cells were found (perivascular infiltration). No mulberry cells, no mast cells.

9. Many amyloid bodies in the periphery of the cord and round the central canal.

10. The difference in the changes in the cord between senile and arteriosclerotic dementia is more quantitative than qualitative. The regenerative and degenerative phenomena in the fibres are much less marked in arteriosclerotic dementia; the cell changes also are not so pronounced. On the other hand, arteriosclerotic dementia shows probably more intense vascular and perivascular changes. In senile dementia "vessel-packets" and degenerative products (fat, pigment, etc.) are more common.

C. MACFIE CAMPBELL.

A CASE SHOWING ENLARGEMENT OF THE ANASTOMOSES
(188) **ABOUT THE NERVE ENTRANCE.** GEORGE COATS, *Oph.*
Rev., Feb. 1911, p. 44.

THE ciliary and retinal vascular systems are normally connected around the optic nerve entrance by anastomoses, which may be enlarged, either congenitally or pathologically, producing cilio-retinal vessels, optico-ciliary vessels, and choroido-retinal veins.

The case described exhibited the unique feature of enlargement of all three anastomoses together. The patient was the subject of post-neuritic optic atrophy, and gave a history of failure of sight after an attack of influenza. The left disc showed a large optico-ciliary vessel, and the right a large cilio-retinal vein and a large choroido-vaginal vein apparently conveying blood from the retina to the subpial veins.

While not excluding the possibility of a congenital origin, the author explains the condition as probably arising from congestion during an attack of influenzal neuritis.

A bibliography is appended.

H. M. TRAQUAIR.

CONTRIBUTION TO THE CYTOLOGICAL INVESTIGATION OF
(189) **THE CEREBRO-SPINAL FLUID.** (Beiträge zu der zytologischen Untersuchung der Lumbalflüssigkeit.) SZECSEI,
Monatsschr. f. Psychiat. u. Neurol., H. 1, 1911, S. 76.

ENUMERATION of the cells in the cerebro-spinal fluid is made either by counting the cells in a dried and stained preparation or in a counting chamber. For determining the nature of the cells, it is best to study dried preparations, stained either by a slightly modified Leishman's method or by methylgreen-pyronin; the author gives the details of the technique as employed by him. If artificial degeneration of the cells has taken place, regeneration can be brought about by washing them with warmed (37° C.) physiological saline solution.

F. ESMOND REYNOLDS.

CONCERNING THE EXAMINATION OF THE CEREBRO-SPINAL
(190) **FLUID ACCORDING TO MAYERHOFER'S METHOD.** (Zur Untersuchung des Liquor cerebro-spinalis nach Mayerhofer.)
SIMON, *Wien. klin. Wchnschr.*, Nr. 3, 1911, S. 94.

THE research was undertaken with a view to determining the value of the method lately introduced by Mayerhofer for differentiating, by the "reduction index" of the cerebro-spinal fluid,

especially between cases of tuberculous meningitis and of pneumonia with marked meningitic symptoms. The cerebro-spinal fluid of 74 patients of the Children's Clinic was examined, and from the results obtained the author regrets that he cannot confirm Mayerhofer's findings.

In 8 cases the test was applied to the cerebro-spinal fluids of patients who certainly had no meningitic affection, and in these the index varied from 1·8 to 3·7. Some of the cases gave normal indices, but several gave findings which, according to Mayerhofer, would be characteristic for tuberculous meningitis.

The cerebro-spinal fluids of 18 cases of tuberculous meningitis were subjected to forty-five separate investigations. The index was nearly always above normal, the majority being between 2·6 and 4·1. In single fractions, the amount was sometimes normal or under 2·0. Of 17 cases examined systematically at intervals, only 9 showed the characteristic decrease of the index; there was rather a distinct rise. Nothing typical for tuberculous meningitis could be deduced.

The fluids obtained by twenty-three lumbar punctures in 8 cases of purulent meningitis were examined in forty-four fractions. These cases consisted of epidemic (4), pneumococcal (3), and influenzal (1) meningitis. The indices obtained were constantly much above normal.

In the majority of the cases of pneumonia with meningeal symptoms, the indices were either above normal or very close to the boundary line. In three cases the findings were characteristic for tuberculous meningitis. In each of three cases the index increased progressively, and in two cases it remained stationary. Hence, again, no finding characteristic for the condition could be deduced.

The writer concludes that the test, far from being a help to correct differential diagnosis, may lead to erroneous conclusions. The best and surest method of diagnosing tuberculous meningitis with absolute certainty is the finding of the bacillus tuberculosis in the fibrin-network which forms in the cerebro-spinal fluid withdrawn.

F. ESMOND REYNOLDS.

CLINICAL NEUROLOGY.

A METABOLIC STUDY OF MYOTONIA ATROPHICA. PEMBERTON, (191) *Amer. Journ. Med. Sc.*, Feb. 1911, p. 253.

THE author records two cases of the disease, and the results obtained from the study of the metabolism of one of them. The creatinin coefficient was found to be very low—2·0139, while the calcium metabolism presented almost a balance. Comparison

with a case of myasthenia gravis showed that, while a low creatinin coefficient occurs in both conditions, in myasthenia gravis there is considerable loss on balance of calcium.

H. RIDLEY PRENTICE.

CONTRIBUTION TO THE STUDY OF MYASTHENIA GRAVIS, (192) WITH A SUGGESTION FOR A CHANGE IN NOMENCLATURE. (CLINICAL AND POST-MORTEM REPORT OF TWO CASES.) FREDERICK TILNEY and HENRY MITCHELL SMITH, *Neurographs*, Vol. i., No. 3, 1911, p. 178.

THIS paper includes the report of two cases of myasthenia gravis. The first case presented the ordinary symptoms of severe muscular weakness and exhaustion, involving the limbs, the trunk and the musculature supplied by the cranial nerves.

The authors draw particular attention to the state of the patient's vision. It was found that his visual acuity was impaired, and that it varied with the circumstances under which it was tested. For instance, on the first examination in a crowded public clinique after the patient had waited for some time, the vision was very much less acute than at a second examination conducted in a private room when the patient was less fatigued. Further, it was found that, although by a rough test the visual field for form and for colours was practically normal, any attempt to obtain a chart with the perimeter caused rapid visual exhaustion, so that the field contracted to a small area around the fixation point. After a period of rest, the field again enlarged, but rapidly diminished with the fatigue of further examination. The colour field contracted in the same way as did the field for white, but more rapidly, and with this material difference, that while a small central area was always retained for white, complete loss of colour perception supervened upon fatigue. Before this patient died he appeared to become practically blind, although there were never any distinct changes to be made out by ophthalmoscopic examination.

The chief points of interest in the post-mortem examination of this case were :—(1) the absence of any enlargement or abnormality of the thymus ; (2) a general distribution of lymphorrhages not only in the muscles and various organs, such as the liver, pancreas and kidney, but also in the central nervous system. They were found, for instance, in and about the oculo-motor nucleus, in the pons, in the trapezoid body and the pontine pole of the facial nucleus, and also in the vicinity of the hypoglossal nucleus ; (3) the presence of patches in the central nervous system in which the neuroglial cells appeared to be increased. This neurogliosis was usually observed in the neighbourhood of lymphorrhagic infiltration,

and the optic chiasma afforded a good example of both conditions ; (4) marked retrograde processes in the muscle fibres, consisting of swelling, increase of nuclei, loss of striation and fragmentation.

The second case reported was only remarkable in its clinical history by reason of the presence of definite impairment of pain-sensibility over the legs. This case also proved fatal, and there was found an enlarged thymus and lymphorrhages in the muscles and also in the thyroid gland.

The authors suggest the term neuro-myasthenia gravis as an alternative for myasthenia gravis on the ground that these cases showed evidence of fatigue which was not merely muscular. The fact that the exhaustibility of myasthenic patients is not confined to the muscular system has been recognised by many observers for many years, and other disorders of sensibility have been described as well as disorders within the realm of the vaso-motor system and of the higher mental faculties. It would probably be impossible to alter a name so firmly established as myasthenia gravis, and if attempts to alter names of diseases with the progress of our knowledge concerning them were encouraged, medical nomenclature would become more confused than ever.

E. FARQUHAR BUZZARD.

THE THENAR AND HYPOTHENAR TYPES OF NEURAL.
(193) **ATROPHY OF THE HAND.** RAMSAY HUNT, *Amer. Journ. Med. Sc.*, Feb. 1911, p. 224.

THE author records one case of the hypothernar and three of the thenar type.

CASE I.—An oyster opener, with wasting and paralysis of all the intrinsic muscles of the hand supplied by the ulnar nerve on the right side (the palmaris brevis was spared). There was a history of alcoholic excess.

CASE II.—A newspaper folder, who noticed gradual wasting of the thenar eminences, with a cramp-like sensation in the whole of both arms, the right more than the left. There was marked wasting of the right and some wasting of the left thenar eminence with typical R.D. Other muscles of the hand were unaffected.

CASE III.—A woman, who did much ironing, with a condition similar to Case II.

CASE IV.—A cyclist, who noticed fibrillary twitchings in both thenar eminences after a long ride. Later, definite wasting of the muscles supplied by the thenar branch of the median became apparent.

In all cases sensation was unimpaired, and the muscles of the arm and forearm unaffected.

The difficulty in differentiating these cases from cases of

muscular atrophy of the Aran-Duchenne type is considerable ; but after consideration of the anatomical relationships of the structures involved, the author maintains that in each case the lesion was a local one, namely, in the hypothenar case, pressure on the ulnar nerve where it passes between the origins of the abductor and flexor brevis minimi digiti, and, in the thenar cases, compression of the thenar branch of the median against the edge of the anterior annular ligament. He contends, therefore, that a neural type of paralysis of the intrinsic muscles of the hand should be recognised as opposed to the myelopathic and myopathic types. The etiological factors are—1. Occupation ; 2. Deterioration of general health, or some intoxication.

H. RIDLEY PRENTICE.

HERPES ZOSTER AFTER INJECTION OF SALVARSAN. (Herpes (194) zoster nach Salvarsan-Injektion.) Prof. BETTMANN, *Deut. med. Woch.*, 1911, xxxvii., p. 13.

BETTMANN has seen two typical examples of zoster occurring among 180 patients injected subcutaneously or intramuscularly with "606." No cases occurred among 50 injected intravenously. He regards the eruption as an arsenical zoster, though syphilis may have acted as a predisposing cause in its production, zoster being relatively frequent in the disease, especially in the secondary stage.

The first case was in a man, aged 48, suffering from an extensive maculo-papular eruption and iritis. On August 29th he received an intra-gluteal injection of 0.6 gm. Improvement followed, but on September 2nd extensive thoracic zoster developed.

The second case was in a man, aged 54, with muscular gummata and gummatous periostitis. On October 10th an intra-gluteal injection of 0.6 gm. was given, and the dose repeated on November 18th below the lower angle of the left scapula. On November 23rd typical zoster appeared over the fourth and fifth ribs on the right side.

In addition to these instances of zoster Bettmann has seen in at least a dozen cases other forms of herpes following injection of salvarsan, e.g. herpes labialis, herpetic angina and herpes proies. The practical significance of these phenomena is that when they occur in certain situations, such as the mouth or on the genitals, they may be mistaken for syphilitic manifestations.

J. D. ROLLESTON.

FIBROMA MOLLUSCUM, OR UNIVERSAL NEURO-FIBROMATOSIS. A. RAVOGLI, *Journ. Cut. Dis.*, 1911, xxix., p. 71.

A RECORD of a case of a man, aged 46, in whom the tumours had existed since birth. The family history was negative. There was no mental impairment. No nerve fibres were found in the tumours removed. Treatment consisted in injections of cacodylic acid, which Ravogli had found beneficial in other cases.

J. D. ROLLESTON.

A CASE OF RECKLINGHAUSEN'S DISEASE. (Un cas de maladie de Recklinghausen.) R. GAUDUCHEAU, *Rev. Neurol.*, 1910, xviii., p. 673. (Soc. de Neurol.)

A MAN, aged 24, in addition to the ordinary symptoms of von Recklinghausen's disease, showed signs of cerebral tumour. He was trephined twice. Death took place during the second operation. The necropsy showed a tumour of the right ponto-cerebellar region and a nodular condition of the spinal cord, most marked in its lower half. Numerous small tumours were found on the nerve roots, especially on the cauda equina. A large tumour was found at the base of the heart, involving the vagi, both of which showed many small fibromata along their course.

J. D. ROLLESTON.

RECKLINGHAUSEN'S DISEASE, WITH THE CLINICAL FEATURES OF AMYOTROPHIC LATERAL SCLEROSIS. (Ein Fall von Neurofibromatosis universalis (Recklinghausensche Krankheit) unter dem klinischen Bilde einer amyotrophischen Lateralsclerose.) PEUSQUENS, *Deut. Zeitschr. f. Nervenheilk.*, 1910, Bd. xl., p. 56.

THE record of a fatal case in a male aged 17. The necropsy showed that the neuro-fibromatous process involved the third, fifth, seventh, eighth, and twelfth cranial nerves, the medulla oblongata, and the whole length of the spinal cord, including the cauda equina. Nodules were also found on the anterior tibial, peroneal, and great sciatic nerves, and also in the cervical plexus and retro-peritoneal nerves. The skin tumours were found to be true neuro-fibromata.

J. D. ROLLESTON.

URINARY HYPERACIDITY AND ITS RELATION TO NEURITIS, NEURALGIA, AND MYALGIA. THOMAS R. BROWN, *Bull. Johns Hopkins Hosp.*, Jan. 1911, No. 1.

THIS paper deals with forty-four cases of "idiopathic" neuritis, neuralgia, and myalgia, in which no definite cause could be determined.

An estimation of the acidity of the urine from early morning specimens, corrected to the normal specific gravity of 1015, showed acidities varying from 30 to 105, compared with a normal acidity of 25.

It is suggested that this hyperacidity is probably the urinary expression of some error of metabolism, and that the pains and other manifestations are due to the attack of a circulating toxin, perhaps acid in its nature, on nerves or muscles whose resistance has been previously lowered.

As regards treatment, great benefit is said to have been derived from a simple dietary, copious water drinking, and the administration of sufficient alkali to reduce the acidity to normal.

HAROLD CROSS.

ACUTE POLIOMYELITIS (HEINE-MEDIN'S DISEASE) IN PARIS.

(199) **TRANSMISSION OF INFECTION TO A MONKEY.** (Sur un cas parisien de poliomyélite aiguë (maladie de Heine-Medin). Transmission de l'infection au singe.) C. LEVADITI, G. FROIN, and J. PIGNOT, *Bull. et mém. de la Soc. méd. des Hôp. de Paris*, 1911, xxxi., p. 90.

A RECORD of a fatal case in a man aged 19. There was no history of contamination and no epidemic focus, so that the case was a sporadic one. Twenty-four hours after the onset the disease involved all four limbs, and in forty-eight hours there was progressive embarrassment of respiration and death. The necropsy showed not only the characteristic lesions of poliomyelitis, but also changes in the cord and spinal ganglia resembling those found in rabies. The disease was transmitted to a monkey, which presented typical paralytic lesions.

J. D. ROLLESTON.

SUBACUTE EPENDYMITIS, ETC. (Ependymite subaiguë avec (200) hydrocéphalie et cavités médullaires du type syringomyélique.)

CLAUDE, VINCENT et LÉVY-VALENSKI, *Presse méd.*, No. 12. 1911, p. 110.

THE authors suggest that the case reported throws light on the pathogenesis of some cases of syringomyelia. In 1902, the patient, aged 11, had an acute illness with violent headache, vomiting, delirium, raised temperature, and localised convulsions. On recovery some paralysis of the right leg remained and the patient became emotional and subject to sudden headaches of short duration. In 1908 there was rapid onset of bilateral spasticity in the legs; change of posture produced headache, which was followed sometimes by unconsciousness, and she began to lose sphincter

control. On admission to hospital she was emotional; there was bilateral optic neuritis, paralysis of the right superior rectus, spastic paralysis of the legs, the arms being unaffected at first, complete loss of sensation to touch, almost complete loss to pinprick, and diminished sensibility to hot and cold from the chest downwards. Incontinence was present, also a painless scoliosis.

Post-mortem there was hydrocephalus and hydromyelia, and, in addition, a cavity was found lying in the substance of the cord throughout its length, communicating with the central cavity at one spot in the cervical region. The ependyma showed at some places desquamation amounting almost to ulceration, and at others proliferation producing a pseudo-glandular formation. These changes were most marked in the cervical region, where there was also some meningitis.

The view put forward is that the initial attack was one of acute ependymitis, that a condition of chronic ependymitis existed subsequently, that exacerbations of this, associated with "crises d'hypertension," took place, during one of which the fluid in the central cavity burst through the diseased ependyma in the cervical region and, meeting the resistance of the longitudinal strands of fibres, travelled down the cord. The further question is raised as to whether, had the patient lived, a neuroglial reaction would not have occurred round the adventitious cavity, producing the appearances typical of syringomyelia. H. RIDLEY PRENTICE.

NEW REFLEX SIGN IN MENINGITIS DIAGNOSIS. NORTHROP,
(201) *Journ. Amer. Med. Assoc.*, No. 2, 1911, p. 144.

THIS is a short note on Brudzinski's reflexes in meningitis. These, briefly, consist of the "neck-sign" and the "leg-sign." The neck-sign is elicited by flexing the patient's head on his chest, when the arms and legs are flexed up and rotated outwards. In the leg-sign, when one leg is passively flexed on the abdomen, the other leg is drawn up by the patient to the same position and kept there. Of these the neck-sign is the more constant. Brudzinski found the neck-sign positive in 97 per cent., the leg-sign in 66 per cent., Kernig's sign in 57 per cent., and Babinski's sign in 50 per cent. of cases of meningitis. Morse, after examining 400 children suffering from all forms of disease, found that "neither neck-sign nor leg-sign is present in well children, or in those ill with diseases other than diseases of the nervous system, and very seldom in diseases of the nervous system outside of meningitis."

J. G. GREENFIELD.

PNEUMOCOCCAL MENINGITIS AND ITS PROGNOSIS. (Über
(202) *Pneumokokken-meningitis und ihre Prognose.*) H. SCHLESINGER,
Wien. med. Woch., Nr. 1, 1911.

PNEUMOCOCCAL meningitis may be serous or purulent. The serous form may be of the nature of a toxæmia from pneumococcal invasion elsewhere, and is sometimes, especially in old people, of unusually long duration. Kernig's sign and neck rigidity remain particularly long.

The purulent form has by no means a uniformly unfavourable prognosis; three cases of recovery are recorded in this paper. Lumbar puncture and pneumococcal serum appear to be valuable therapeutic agents. The condition may be recovered from, even when complicated by encephalitis. The disease may follow on pneumococcal conditions of the respiratory tract, on endocarditis, on ear or skull conditions, or it may be primary.

The commencement may be apoplectiform, acute, sub-acute, or gradual. The fever is shorter than, and not so severe as, in epidemic meningitis. The patient feels well whenever the fever disappears.

The pulse is usually less rapid than in epidemic meningitis. Herpes labialis is frequent, atypical herpes rare. Choked disc may be present. In the later stages membrane formation may occur in the spinal fluid.

J. H. HARVEY PIRIE.

SEROUS MENINGITIS SIMULATING DISEASE OF THE HYPO-
(203) **PHYSIS.** (*Meningitis serosa unter dem Bilde hypophysärer*
Erkrankung.) K. GOLDSTEIN, *Arch. f. Psychiat.*, Bd. 47, Ht. 1.

A DISCUSSION of the differential diagnosis between serous meningitis and tumour of the hypophysis on the basis of the records of three young patients presenting certain hypophyseal symptoms—adiposity, genital atrophy, disorders of growth—which were combined with transitory symptoms of increased intracranial pressure.

C. MACFIE CAMPBELL.

OTOGENIC SEROUS MENINGITIS. (*Beitrag zur Kenntnis der*
(204) *otogenen Meningitis Serosa.*) MUCK, *Zeitschrift für Ohrenheil-*
kunde, Bd. 62, H. 2-3, 1910, S. 221.

THE author describes four cases of serous meningitis occurring in the course of suppurative middle-ear disease. In two of the cases the ear disease was chronic, in the other two, acute. The lesion in both of the acute and in one of the chronic cases was left-sided. One of the acute cases died from diffuse streptococcal infection. (The cerebro-spinal fluid was sterile.) The remaining three cases recovered.

In every instance optic neuritis was present, and in this connection the author quotes the results of Schieck's experiments on apes. Schieck concluded that increase of intra-cranial pressure alone was not sufficient to determine optic neuritis, but that increase in the quantity of cerebro-spinal fluid was a necessary accompaniment; further, that the fundus oculi was earlier and more markedly affected on the side of the lesion.

In each case the dura, when exposed at the operation, bulged markedly into the wound and did not pulsate. Evacuation of cerebro-spinal fluid was immediately followed by recession of the dura and return of pulsation. In one of the cases the dura had on the fifth day after operation again ceased to pulsate, though it did not bulge. It was incised, but there was no escape of fluid. The absence of pulsation was attributed to excessive diminution of the intra-cranial arterial pressure.

The author considers that a definite increase of sterile cerebro-spinal fluid and the presence of choked disc, recognised by lumbar puncture and by ophthalmoscopy, are characteristic features of serous meningitis, and that a favourable termination serves to confirm the diagnosis.

JOHN M. DARLING.

A CASE OF ERYTHEMA MULTIFORME AS AN EARLY MANIFESTATION OF TUBERCULOUS MENINGITIS. M. GOODRICH, *Med. Record*, 1911, i., p. 180.

A WOMAN, aged 25, was admitted to hospital on January 24, 1910, with erythema nodosum accompanying erythema multiforme of the extremities. During the next three weeks several fresh nodes appeared. On February 26 symptoms of tuberculous meningitis developed, and death occurred on March 10. The diagnosis was verified by the necropsy (*v. Review*, 1910, p. 441).

J. D. ROLLESTON.

THE OPERATIVE TREATMENT OF TUBERCULOUS MENINGITIS. A. J. CLEVELAND, *Med. Press*, Jan. 25, 1911.

THE prominence of the symptoms of increased intra-cranial pressure in cases of tuberculous meningitis, and the success which has attended the surgical treatment of tuberculous peritonitis, has led many to hope that operative measures designed to relieve the high intra-cranial pressure might give some relief in meningeal tuberculosis. The difficulty is in diagnosing the meningitis before the patient is in a hopeless condition and operative treatment, so far, has been devoid of success. The writer records four cases subjected to operation, and in none of them was any material benefit obtained, nor was the fatal issue averted or even delayed.

In the first case drainage of the base of the brain was effected, but without any favourable influence on the course of the disease.

In the second case the lateral ventricles were tapped. Alarming convulsions resulted, and death followed in due course.

In the third case a similar procedure effected no improvement, and in the fourth case drainage of both the lateral ventricles and the basal region produced no change in the child's condition, and death followed on the next day.

The writer concludes that the increased intra-cranial tension is not the cause of death in these cases, but that death results from the effect of the inflammatory process on the brain substance.

Operative interference is consequently useless.

D. P. D. WILKIE.

PURPURA FULMINANS WITH PARA-MENINGOCOCCUS SEP-

(207) **TICÆMIA.** (Un cas de purpura fulminans avec septicémie à para-méningococques.) CARNOT and P. L. MARIE, *Bull. et mém. de la Soc. méd. des Hôp. de Paris*, 1911, **xxxi.**, p. 74.

A WOMAN, aged 33, was admitted to hospital with a purpuric eruption and general weakness. She had no meningeal symptoms. Death occurred within six and a half days from the first appearance of the hæmorrhages. Blood examination showed moderate polynucleosis without anæmia, and the presence of an organism subsequently proved to be the para-meningococcus. At the necropsy the cranial and spinal meninges were found to be congested, but showed no exudate except in two patches over the left Sylvian fissure, from which three diplococci were isolated resembling those found in the blood, and one fibrinous area on one of the roots of the cauda equina, in which no organisms could be found. The case illustrates how the para-meningococcus, like the meningococcus, may cause septicæmia without any clinical evidence of meningitis (*cf. Review*, 1909, pp. 419 and 741). The slight meningeal lesions found post-mortem showed that meningitis was a late localisation of the infection.

J. D. ROLLESTON.

THE TOPOGRAPHICAL DIAGNOSIS OF SUBTENTORIAL BRAIN

(208) **TUMOURS.** HOPPE, *Journ. Amer. Med. Assoc.*, Dec. 3, 1910, p. 1966.

TUMOURS of the corpora quadrigemina, pons, and cerebello-pontine angle are first discussed, but most of the paper is devoted to the consideration of cysts and tumours of the cerebellum itself. The importance of early diagnosis is emphasized, as this

affords the best hope of successful surgical intervention. The physiology of the cerebellum is briefly considered and the focal signs of cerebellar disease described more fully. The occasional difficulty in the differential diagnosis of cerebellar tumours from frontal growths is referred to, and stress is laid on the characteristic mental condition so often seen in cases of frontal tumour. Mention is made of cases of pseudo-tumour as likely to lead to an erroneous diagnosis of cerebellar growth. Seven cases, from the author's personal experience, are recorded to illustrate the symptomatology of tumours in the various positions under consideration.

(In the discussion which followed the reading of this paper C. L. Dana claimed that Hunt and Frankel in 1906 had first drawn attention to the diagnosis of tumours of the cerebello-pontine angle. Stewart and Holmes' paper dealing fully with the subject was published in *Brain*, Winter 1904.)

C. M. HINDS HOWELL.

THREE CASES OF TUMOUR IN THE CEREBELLO-PONTINE
(209) **ANGLE.** GRINKER, *Journ. Amer. Med. Assoc.*, Dec. 3, 1910,
p. 1961.

In the cases reported a correct diagnosis was made, but in none was the growth successfully removed. The author's comments on the cases are both frank and interesting. He finds that lumbar puncture in such cases, if care is taken to prevent a sudden escape of cerebro-spinal fluid, may prove of much service in relieving headache. Other points of importance are that focal symptoms often precede general symptoms by a considerable period of time, and that papilloedema may occur late, but rapidly, in tumours of the posterior fossa. Homolateral weakness of the arm and leg in one case had led to a diagnosis of cerebral hemiplegia, but was in reality due to cerebellar asthesia, as Luciani and others have pointed out. C. M. HINDS HOWELL.

BRAIN ABSCESS, WITH SUCCESSFUL OPERATION. (Ein
(210) **erfolgreich operierten Hirnabszess nach Stirnhöhlener-**
krankung.) RISCHE, *Zeitschrift für Ohrenheilkunde*, Bd. 62,
H. 2-3, 1910, S. 231.

THE patient in this case was a youth who had always enjoyed good health. There was no previous history of headache, nor had he ever had any nasal symptoms. The trouble commenced with pain in the left frontal region. Gradually a swelling appeared, and about eighteen days after the onset of the pain a large subperiosteal abscess was incised and evacuated. About a fortnight afterwards the pain returned, and vomiting commenced. There

was no other sign of intra-cranial complication except a slight suggestion of stupidity. Rhinoscopic examination revealed no pus in the nose. The patient was anæsthetised and the left frontal sinus exposed. A large fistulous opening was found in the anterior wall, and the cavity contained granulations. In the cerebral wall there was a "pin-head" perforation, which was enlarged with chisel and forceps. The subjacent dura was covered with granulations and did not pulsate. The brain was explored with a syringe and pus was struck. A crucial incision was then made in the dura and the abscess was freely opened. From one and a half to two table-spoonfuls of pus were evacuated and the cavity was drained with a rubber tube. No communication was found between the nose and the frontal sinus. The patient recovered.

The frontal sinusitis was here presumably not of nasal origin, but commenced with an osteomyelitis of the bony wall, the mucosa being secondarily involved.

JOHN M. DARLING.

THE AFTER LATER EFFECTS OF HEAD INJURIES. W. B. (211) WARRINGTON, *Med. Chron.*, Feb. 11, 1911, p. 273.

IN continuation of a series of articles dealing with the effect of injury in the causation of nervous disorders, the writer here considers the well-known later effects of head injuries.

He describes :

1. The general after effects: mild or severe symptoms of cerebral instability.
2. The loss of memory.
3. Actual insanity.
4. The so-called later or delayed traumatic apoplexy.
5. Traumatic epilepsy.

Cases from the author's experience and from that of others are related illustrating these types. A considerable bibliography is given.

AUTHOR'S ABSTRACT.

PRESIDENTIAL ADDRESS ON TWO THEORIES OF HYSTERIA. (212) (Neurol. Section.) ORMEROD, *Proc. Roy. Soc. of Med.*, Jan. 1911, p. 1.

THE first theory considered by the writer is that of Janet, which is stated somewhat as follows:—

What is really distinctive of hysteria is the restriction of the field of consciousness, so that the hysterical mind cannot take in so many things at once as the normal mind. As a consequence many sensations reach the subconscious mind, but are not assimilated to personal consciousness.

It is shown how most of the symptoms of hysteria conform with this theory, and hysterical amnesia, fixed ideas, impulsiveness, anæsthesia, and motor paralysis are successively considered in detail. The writer points out that the application of the theory seems to stop short with the symptoms thus explained, seeing that many hysterical patients seem to suffer from no mental disability at all.

In extension of this criticism, perhaps some such psychological theory as that advanced by M'Dougall might be invoked which would attribute the restriction of the field of consciousness to the vagaries of the stream of nervous energy, owing to temporary or permanent defects of its volume, or of the synaptic resistances which control its path. Under this view the restriction of the field of consciousness would be symbolised, not by short-sightedness, but by a wall interposed in a particular direction.

The other theory reviewed is that of Breuer and Freud—that hysteria is due to the repression of emotion and to its forcible banishing from the memory into subconscious regions, whence it crops up disguised as the various hysterical symptoms; further, that the repressed emotion is always of a sexual nature; and lastly, that by bringing into consciousness the repressed emotion, a "discharge of the affect" may be produced and the condition cured. Reference is made to the latest developments of this theory, which seek the origin of many hysterias, not merely in sexual occurrences during infancy, but even in subconscious sexual workings during that period. The latest technique of psycho-analysis is also described in detail.

Whilst paying a tribute to the value of Freud's work, the writer considers that there is a lack of conclusive evidence of the origin of hysteria in the forcible repression of the emotions, of its invariably sexual origin, and of the so-called "conversion of the affect" into hysterical symptoms. It is also suggested that psycho-analysis may in many cases do more harm than good.

It is interesting to note that the writer appears to favour a psychologic view of subconscious phenomena, for he says "they group and associate themselves just as do our conscious thoughts." And again, ". . . the subconscious workings of *the mind*. About the existence of these there can be little doubt."

HAROLD CROSS.

FREUD'S LATEST WORK AND THE PROBLEM OF HYSTERIA.

(213) (*Les derniers travaux de Freud et le problème de l'hystérie.*)

KOSTYLEFF, *Arch. de neurol.*, fév. 1911, p. 75.

THIS paper gives an account of an attempt by Freud to bring to light all the emotional factors underlying a hysterical cough

in a patient who had been brought to him for a nervous breakdown following an attempt at seduction.

The author's opinion is that the method of Freud is profoundly suggestive, but that he is no longer master of his own method, which seems to carry him beyond the limits of science.

As an instance of this extravagance, the ingenious suggestion may be quoted that aversion to sexual intercourse is associated with the fact of the excretory functions of the sexual organs. In a case of hysterical impotence this view might appear plausible, but here it is presented in order to explain the disgust of a girl of eighteen at the advances of her friend's husband, whom she had previously liked.

Again, in the exposition of a dream of a fire it is said that the idea of a fire is due to a childish reminiscence complicated by an association by contrast. The fear of fire replaces the fear of water, *i.e.* the fear of nocturnal enuresis.

The general impression produced by the paper is that this method of treatment is so extremely disagreeable that it should only be resorted to when all other methods have been tried unsuccessfully, and especially the method of replacing the sexual preoccupations by healthy interests and some attempt at moral self-culture. In the case in question the patient, "by a freak of humour against the physician, refused to continue the treatment," but the only inference which Freud draws from this is that the decision arose from a sentiment of vengeance "transferred" from its original object to himself—an eventuality which he should have foreseen and against which he should have warned the patient.

HAROLD CROSS.

REFLEXES IN SURGICAL DIAGNOSIS. ROBERT T. MORRIS, (214) *Boston Med. and Surg. Journ.*, Feb. 2, 1911, p. 141.

CASES diagnosed as ulcer of the stomach may be really cases of gall-stones, bile-tract adhesions, appendicitis, pregnancy, eye-strain, or psycho-neurosis, with symptoms referred to the gastric region. A few cases of flexion of the uterus are due to anatomical defect, a small number to spasm of neurotic origin, and the great majority to spasmodic flexion resulting from some peripheral irritation. Neuralgia in various situations may be of reflex origin.

DISTURBANCES DEPENDENT ON EYE-STRAIN. ELLICE M. (215) ALGER, *ibid.*, p. 142.

It is possible to overstrain the normal eye by overuse, but the chief strain comes from the efforts of the abnormal eye to compensate for optical defects by increased muscular exertion. Age,

health, temperament, and conditions under which the eyes are used must all be considered in estimating eye-strain. Eye-strain is due to the fatigue of overcoming defects, not to the defects themselves, and therefore eye-strain is more apt to accompany good vision than bad. Failure to relieve eye-strain may be due to concentrating attention on the useless bad eye, while neglecting the overused good one. There are three distinct types of overstrain symptoms—the muscular, the nervous, and the psychic. The benefit derived from eye examination and treatment in some neurasthenic cases appears to be in part due to suggestion.

REFLEXES AND REFLEX NEUROSES FROM THE UPPER AIR
(216) TRACT (INCLUDING THE NOSE AND PHARYNX). W.
 SOHIER BRYANT, *ibid.*, p. 144.

A CONSIDERATION of the points of origin of stimuli, and the causes and symptoms of reflexes, results in a "conservative estimate" of 9880 different manifestations from the upper air tract. Simple reflex neuroses are seen in hay fever, rose cold, and paroxysmal cough and sneeze. Compound reflex neuroses due to abnormal stimuli, hyperæsthesia of the nerve endings, or disease of the nerves or nerve centres, or combinations of these, cannot be uniformly reproduced by experiment. Examples of such are asthma, asthenopia, headache, and epilepsy. Simple reflex neuroses can be produced by artificial stimulation, or, failing this, a paroxysm can be arrested by cocainisation of hyperæsthetic areas. In complex cases the origin of the reflex may only be discovered by treating local abnormalities. The great variety of reflex neuroses emanating from the upper air tract is attributable to the large sympathetic nerve supply of this region, particularly of the nose. The human nose and its nerve supply are in a state of degeneration, and this, combined with the constant irritations to which the organ is subjected, accounts for its extraordinary susceptibility to pathological reflex action. A formidable list of reflexes and reflex symptoms completes this article.

WHAT IS THE MEANING OF REFLEX? EDWARD D. FISHER,
 (217) *ibid.*, p. 149.

ALL action is reflex. The term reflex should not be applied to those disturbances, painful or otherwise, resulting from diseased organs—eye, nose, uterus, etc.—which are not in the true sense of the word reflex, but simply referred. When the actual cause of a referred disturbance has been removed, a good deal usually remains to be done in the way of general treatment of the patient before a cure can be accomplished. Head's areas of superficial pain and

anæsthesia for the diagnosis of visceral disease are not reliable clinically.

**REFLEX SYMPTOMS AND DISEASE OF THE NERVOUS
(218) SYSTEM.** WILLIAM M. LESZYNSKY, *ibid.*, p. 150.

NERVOUS symptoms often disappear after the removal of sources of irritation, but the neurotic state is usually merely intensified and not caused by these derangements. The treatment of constitutional neuroses and organic diseases of the nervous system on theories of their production by reflex action is to be thoroughly condemned.

HENRY J. DUNBAR.

REFLEX DISTURBANCES REFERABLE TO THE EAR. J. R.
(219) PAGE, *Boston Med. and Surg. Journ.*, Feb. 2, 1911, p. 147.

ONE of the most familiar of the reflex disturbances referable to the ear is the contraction of the muscles which follows the hearing of a loud or unexpected sound. This reflex can be elicited even in the newly-born.

Among the reflex phenomena originating in the outer ear, the most important are the neuralgias and the cough set up by irritation of the trifacial nerve and Arnold's branch of the vagus.

Affections of the middle-ear may give rise to reflex psychoses and reflex neuroses. It is to be remembered that pain due to acute middle-ear inflammation may be referred to the temporal region or to the teeth; or it may produce facial neuralgia, often followed by temporary facial paralysis. Herpes oticus may also occur in these cases.

The reflex disturbances caused by irritation of the inner ear are many and complex. In connection with nystagmus and vertigo of inner ear origin much information has been gained from the work of Ewald and Bárány.

An impacted plug of wax may give rise to any of these disturbances, owing to the fact that, though occupying the external auditory meatus, it may also irritate the middle ear, and, through the latter, the inner ear.

JOHN M. DARLING.

ELICITING THE ACHILLES-TENDON REFLEX. (Zur Auslösung
(220) des Achillessehnenreflexes.) ALTHOFF, *Münch. med. Wchnschr.*,
No. 2, 1911, S. 86.

A CERTAIN method for eliciting the Achilles-tendon reflex, if present, is to have the patient sitting well back on a chair and

looking somewhat upwards; the leg is flexed at the knee to an angle of 110° to 150° ; the foot is placed on a foot-rest about 22 cm. high, and whose top is about 6 cm. broad and rounded at the sides; the tendon is then struck with the hammer.

F. ESMOND REYNOLDS.

THE ARGYLL-ROBERTSON SIGN IN CEREBRAL AND SPINAL

(221) **SYPHILIS.** J. MICHELL CLARKE, *Brit. Med. Journ.*, 1911, Vol. i., p. 296.

Is this sign compatible with syphilitic disease of the central nervous system without a tendency to progressive degeneration? The sign is an example of the selective action of a poison upon the nervous system. Similar lesions are found in the parasymphilitic diseases, but not in cerebro-spinal syphilis, in which gross lesions only occur.

In forty-eight cases of cerebral syphilis: in six reaction to light was sluggish, but in three improved under treatment; in one case with right iridoplegia there was left A.R. phenomenon, which also recovered. In two, A.R. sign present; in one, marked mental symptoms, possibly early general paresis, and in the other, a woman, tabes has developed since. Of twenty-one cases of spinal syphilis, two gave the A.R. sign. Both were examples of Erb's syphilitic spinal paralysis, and it is suggested that in such cases this clinical syndrome, which has a varied pathology, depends on a pure degeneration of the pyramidal tracts, and thus corresponds to the parasymphilitic conditions.

Unilateral loss of the right reflex was present in two or three of the cases, but was not taken into account, on account of the greater difficulty in such cases in excluding local disease. Moreover, if the above view of the production of the A.R. sign is correct, it should be bilateral. So far as these sixty-nine cases go, they support the view that the A.R. sign is not merely evidence of past or present syphilis, but is also an index of a degenerative (parasymphilitic) process within the central nervous system, which may be progressive or have become stationary.

AUTHOR'S ABSTRACT.

SERUM DIAGNOSIS OF SYPHILIS, NOGUCHI SYSTEM W. A.

(222) GROAT, *N.Y. Med. Journ.*, Nov. 12, 1910.

The Noguchi method was used in 159 cases of various kinds, and extremely satisfactory results have been obtained.

In 52 non-symphilitic cases a negative result always was obtained.

D. K. HENDERSON.

**OBSERVATIONS UPON THE NOGUCHI MODIFICATION OF
(223) THE WASSERMANN COMPLEMENT FIXATION TEST
IN THE DIAGNOSIS OF LUES IN THE MILITARY
SERVICE.** CHARLES F. CRAIG, *Journ. of Exper. Med.*, xii., p. 6.

THE Noguchi modification was adopted after careful consideration of the Wassermann test and other modifications. The author's results have been most favourable, and he esteems it of the greatest value in routine diagnostic work in the military service.

Half of the tests were made with liquid amboceptor, and all of them with liquid antigen.

In every case in which anomalous results were obtained it was found that the fault lay in some quantitative error made by the author himself, and was not inherent in the method.

Three groups of cases were examined :

Group I.—Cases in which the clinical diagnosis was lues or suspected lues, or in which there was a history of previous infection.

Group II.—Cases in which the clinical symptoms were of some other disease.

Group III.—Cases known not to be luetic in nature.

In the first group 391 cases were examined, of which 316, or 80 per cent., gave positive results.

In the second group 178 cases were examined, with a positive result in three cases. Of these three cases two were suffering from malarial fever of tertian type, and the tests were made during the febrile stage; the third was a case of frambesia.

In the third group 70 healthy individuals, in whom lues could be positively excluded, were examined, and a negative result was obtained in every instance.

No case was termed positive unless there was absolute inhibition of hæmolysis. Weak and partial reactions occurred, but they were reported only where the result of treatment was requested, never where a diagnosis of lues was in question.

The results obtained are held to prove that by the use of the complement fixation test in the military service it is possible to prevent the enlistment of men suffering from latent lues who would otherwise be enlisted, to control specific treatment by using it as an index of the efficiency of such treatment, to clear up the diagnosis of obscure or suspicious cases, and to enable the surgeon to avoid mistakes in discharges for disability in cases suspected of this disease.

D. K. HENDERSON.

THE WASSERMANN REACTION AFTER EXPERIMENTAL
 (224) **LESIONS OF THE CENTRAL NERVOUS SYSTEM.** (*La reazione di Wassermann in rapporto a lesioni sperimentali della sostanza nervosa centrale.*) F. NIZZI, *Riv. speriment. di Freniat.*, Vol. 41, Fasc. 1-2, p. 120.

SOME authors have held that the substance to whose presence the Wassermann reaction is due is a product of nerve degeneration. The author has performed the Wassermann test on rabbits and dogs which had been the subjects of extensive destruction of cerebral substance, and on others some time after an intraperitoneal injection of an emulsion of cerebral substance had been performed.

With regard to the dogs, the results are inconclusive, on account of the fact that normal dogs frequently give the Wassermann reaction. With rabbits which had undergone operation the reaction was obtained in 83 per cent., whereas normal rabbits only gave a positive reaction in 22 per cent. of the total number of cases examined.

The author proposes to estimate the cholesterin in the serum of animals that have undergone operative interference with the nervous system, pointing out that Pighini showed such an increase of cholesterin in the serum of syphilitics giving a positive Wassermann reaction.
 F. GOLLA.

TREATMENT OF NERVE SYPHILIS AND PARASYPHILIS BY
 (225) **ARSENOBENZOL.** (*Traitement par l'arsénobenzol de la syphilis nerveuse et de la parasyphilis nerveuse.*) J. A. SICARD and M. BLOCH, *Bull. et mém. de la Soc. méd. des Hôp. de Paris*, 1910, xxx., p. 894.

A RECORD of forty-six cases shown in tabular form. The authors thus summarise their conclusions:—The treatment is indicated in every recent case of nerve syphilis and tabes. Its action is superior to mercury, not only as regards the local lesion, but also by its beneficial influence on the general condition. It is useless in old nerve syphilis and in general paralysis, even when employed at the onset of the first clinical symptoms. In nerve syphilis, Wassermann's reaction and spinal lymphocytosis are only exceptionally modified by the treatment.
 J. D. ROLLESTON.

THE TREATMENT OF SYPHILIS WITH EHRLICH'S DIOXYDIA-
 (226) **MIDOARSENOBENZOL.** WILHELM WECHSELMANN, *N.Y. Med. Journ.*, Sept. 3, 1910.

THE author has treated over 600 cases, mainly suffering from the primary and secondary manifestations. He states that the erosive

chancres become clean after from twelve to twenty-four hours, and heal rapidly ; in pronounced sclerosis the cleaning process is of the same rapidity, but absorption takes longer. Mucous patches in the mouth heal in from twenty-four to forty-eight hours, even if the patient is an inveterate smoker. The roseola disappears in a few days, as do also the malign ulcerous syphilides, the rupia, the watery papules, the small papulous syphilides, which are otherwise so pertinacious, and the gummata. The effects of syphilis on bones are described as very favourable; the night pains of the bones disappear as by magic.

One case of cerebral lues is briefly reported, which has shown much improvement.

The Wassermann reaction usually disappears in from eight to forty days after the injection, according to the primary strength of the reaction.

No bad after-effects of any importance have been observed.

D. K. HENDERSON.

RESULTS OBTAINED BY "606" IN THE TREATMENT OF (227) NERVOUS DISEASES. (*Sur quelques résultats obtenus par le "606" dans le traitement des maladies nerveuses.*) M. G. MARINESCO, *Presse méd.*, No 8, 1911, p. 65.

In this paper a summary is given of recently published work on "606," and this is supplemented by a more detailed account of thirty cases of various forms of syphilitic disease of the nervous system treated by the author.

The conclusions arrived at are as follows:—

1. That arseno-benzol has undoubtedly a specific action on syphilitic disease of the nervous system.

2. That the most susceptible forms of disease are those of syphilis proper (gumma, endarteritis, meningitis, etc.), and that the action of "606" is more favourable in proportion as the pathological process is more recent, and is ineffective in proportion as actual destruction of nervous tissue has occurred.

3. That when compared with mercury and potassium iodide, of which the same statement might be made, "606" is found to act more quickly, and often to succeed in a startling way when these drugs have failed, and that it should therefore be always given a trial.

4. That the numerous cases of failure, and those of subsequent relapses, may probably be explained by the existence of "arseno-resistive" strains of spirochaetes.

Ehrlich has shown by the use of the ultra-microscope that some spirochaetes are not killed by "606," but after a certain lapse of time show an increased activity, and Neisser has suggested that

this contingency should be provided for by following up "606" injection by a mercurial course.

The phenomenon sometimes observed of a disappearance of the Wassermann reaction, followed later by a relapse, may be mentioned in this connection as explicable on the assumption that the spirochætes are diminished in number and in activity, but are not entirely exterminated.

5. That lesions of the myocardium, liver and kidneys are to be regarded as contra-indications to the use of "606," which appears to have a selective toxic action in such cases.

6. That "606" is not to be regarded as having a specific toxic action on the organ of vision, such as is shown by atoxyl, but that the striking cases brought forward by Finger to support this view are to be regarded as relapses of the original syphilis.

As regards the so-called para-syphilitic manifestations, the collected results show little evidence of any benefit having accrued from "606" treatment in general paralysis, whilst there are several recorded cases of exacerbation of mental symptoms.

With tabes the results have been more encouraging, and removal of practically every sign and symptom has been recorded in one case or another. But the failures have been many, and in some cases the pains have been aggravated.

The author appears to concur with Oppenheim's opinion that in tabes the decision as to treatment should be left with the patient.

The author has observed no unpleasant sequels of treatment beyond trifling local manifestations at the site of injection, and slight rises in temperature.

The method of administration advocated is the injection of solution intra-muscularly, intravenously, or in both ways.

HAROLD CROSS.

THE EHRLICH-HATA TREATMENT IN SYPHILITIC DISEASES

(228) **OF THE NERVOUS SYSTEM.** (*Die Ehrlich-Hata Behandlung bei syphilitischen Erkrankungen des Nervensystems.*)

MARCUS, *Münch. med. Wchschr.*, Nr. 2, 1911, S. 76.

THE author has treated fifty patients with "606," these comprising cases of paralysis, of tabes, and of pure syphilitic infection. During treatment five patients died, but in none of these was the cause of death due to the drug. In many of the cases with involvement of the central nervous system a great improvement, both in regard to signs and to symptoms, was noticed, and the writer concludes that the drug has a specific effect on the syphilitic process; he observed improvement especially in speech disturbance. Often the positive Wassermann reaction is lost. Danger

may arise from the use of "606" in the case of patients who are the subjects of diseases of the heart and vessels. The author believes alarming symptoms may be brought about by the drug causing alterations in the intra-cranial pressure. Injection may be followed by acute pain, which after three hours may become dull, and may thus persist for as long as a few days. Cardiac disturbance also may occur.

From his investigations the author concludes that there is no danger of the drug accumulating if four to six weeks are allowed to elapse between the injections. "606" cannot cure advanced cases of paralysis or progressing cases of tabes, yet perhaps their condition may be improved. Optic atrophy is no contra-indication to the use of the drug.

Some of the dangers and much of the unpleasantness are due to the method of administering the drug, and the writer concludes his paper by giving his present technique.

The paper is for the most part a resumé of the literature dealing with certain aspects of the drug, and especially does the author refer to Alt's previous work. F. ESMOND REYNOLDS.

PSYCHIATRY.

ON RESIDUAL DELUSIONS IN ALCOHOLIC DELIRIUM. (Über (229) *Residualwahn bei Alkoholdeliranten.*) G. STERTZ (of Bonn), *Allg. Ztsch. f. Psychiat.*, Bd. 67, Ht. 4.

THE author reports nine cases of alcoholic delirium where, instead of a recovery by crisis with complete insight into the nature of the disorder, delusions persisted for some time, and the patient was unable immediately to shake off the belief that the delirious experiences had been actual occurrences. Insight into the morbid experiences in the ordinary case is favoured, firstly, by the sharp contrast between the clear consciousness of the convalescent with his memory of the general clouding of the delirious state, and, secondly, by the absurd fantastic nature of the experiences which make them so difficult to assimilate to the content of normal consciousness. Where the delirium does not end critically, but gradually subsides, or where there has been no marked clouding, the sharp contrast mentioned above is wanting. The delirious experiences are not always fantastic, and their absurdity is somewhat diminished by explanatory delusions; thus in certain deliria there is present a tendency towards the formation of a system of delusions. Insight into the true nature of delirious experiences may also be delayed by the inability to make the effort necessary to sift the true from the false. In the nine cases reported the delirium was not quite typical, and only one

ended with a critical sleep. In the majority of them auditory hallucinations were prominent, and in two cases the picture was that of a mixture between a delirium and an acute alcoholic hallucinatory condition ("Hallucinosi," Wernicke); in the latter condition there is, as a rule, no clouding of consciousness. The inability to make the effort necessary for insight into the disorder may have been favoured in some of the cases by the condition of physical reduction in which several of the patients had been for several months. The relation of the delusions to the usual trends of thought of the individual and to his mental constitution is a question of interest.

C. MACFIE CAMPBELL.

TRAUMATIC MENTAL CONFUSION. (*La confusione mentale* (230) *traumatica.*) G. MONDIO, *Riv. Ital. di Neuropat., Psychiat. and Elettroter.*, Gennaio 1911.

SINCE the earthquake at Messina in 1908 the author has had to deal with twenty cases of traumatic mental confusion. The ages of the patients varied from 20-50. They all suffered from bodily injury as well as from mental shock. After the period of unconsciousness they complained of vertigo, headache, and hyperæsthesia of all the senses. They were agitated by terrible dreams and hallucinations; they were markedly disorientated; their perceptive faculties and memory were weakened, and they had delusions, chiefly of persecution.

Most of them began to improve after a short time, but their complete recovery was delayed for a considerable period. In two cases, however, the patients have passed into a condition of marked dementia. It is interesting to note that in one of these patients there had been injury to the head as well as psychic shock, while in the other the mental change followed a psychic shock alone. This second case supports the opinion that it is the affective factor which gives rise to the mental disturbances after great calamities, such as earthquakes or fires. The pathogenesis of these mental disturbances is as yet little understood.

R. G. ROWS.

A CASE OF DEGENERATION WITH SEXUAL PERVERSION. (231) (*Un caso di degenerazione con perversimento sessuale.*) R. FRONDA, *Manicomio*, An. 26, p. 111.

THE case studied is a congenital psychopathic, in whom a complex sexual perversion has developed. The symptoms are manifested in the form of onanism combined with fetishism, masochism, and sadism. The malady has recently become aggravated by a crisis of neurasthenia.

F. GOLLA.

PARÆSTHESIA IN THE GENESIS OF THE DELIRIUM OF
 (232) **PHYSICAL PERSECUTION IN CASES OF DEMENTIA**
PRECOX. (*Le parastesiaie nella genesi del delirio di perse-*
cuzione fisica nei dementi precoci.) PAOLO CASCELLA, *Ann. di*
Neurol., Anno 28, Fasc. 5, p. 310.

THE author concludes that the delirium of physical persecution is intimately connected with sensory disturbances; that in all probability there is an ætiological connection between dementia precox and the paræsthesia, which appears to depend on local circulatory disturbances. The precordial pain, the subjective disturbances of sensation, and the hyperhydrosis are in all probability due to irritation of the sympathetic. F. GOLLA.

PRODROMATA OF CATATONIC STATES. (*Prodromi di eccita-*
 (233) *menti catatonici.*) D. VALTORTA, *Manicomio*, An. 26, p. 19.

THE history of five cases is given, in all of which the catatonic state was preceded by psychopathic symptoms, to which the author attributes the significance of an aura. This aura is presented under manifold forms of sensorial and psychical disturbance. It appears suddenly, and receives its characteristics from the underlying form of psychosis, from which the patient is suffering.

F. GOLLA.

ON THE PROGNOSIS OF CATATONIA. (*Zur Prognose der Kata-*
 (234) *tonie.*) RÆCKE (of Kiel), *Arch. f. Psychiat.*, Bd. 47, Ht. 1.

THE author gives a general discussion of the question, and reports the results of an investigation in 1908 of the condition of 171 patients who had been admitted for catatonia from Nov. 1901 to Dec. 1905. 15·8 per cent. were considered by their relatives to be cured, 11·1 per cent. were much improved, but, although not considered insane, were not the same as before the attack.

C. MACFIE CAMPBELL.

ON THE PROGNOSIS OF MORAL INSANITY (WITH CATAM-
 (235) **NESES).** (*Über die Prognose der Moral Insanity.*) D.
 PACHANTONI (of Geneva), *Arch. f. Psychiat.*, Bd. 47, Ht. 1.

THE author gives the records of five cases of so-called moral insanity in which later information, gained after many years (19, 18, 15, 18, 11), showed that the patient had been able to settle down to a life of considerable social efficiency. The prognosis with regard to such patients in early life should not be too pessimistic.

C. MACFIE CAMPBELL.

THE OPSONIC INDEX IN SOME CASES OF MENTAL DISEASE.

(236) (*L'Indice opsonico in alcuni malati di mente.*) MARI BACCCELLI and TULLIO TERNI, *Riv. di Pat. nerv. e ment.*, Vol. 16, Fasc. 1, p. 24.

AN attempt to show that in epileptics there is a general rise of the opsonic index to all organisms, whereas in other nervous and mental diseases it is normal. F. GOLLA.

TREATMENT.

HOW TO REGARD HYPNOTISM. (*Comment concevoir l'hypnotisme, ses applications thérapeutiques et médico-légales d'après J. Babinaki.*) HENRI MEIGE, *Rev. Neurol.*, jan. 15, 1911, p. 12.

THE purport of this paper is to deny to the hypnotic state all importance medico-legally, and practically all value therapeutically.

Babinski's view is summarised in the sentence, "Hypnotic sleep does not create suggestibility; it has not been shown even that it increases it; it is simply one manifestation of suggestibility."

Other conclusions advanced are—

That no one can be hypnotised against his will.

That the memory of what transpires in the hypnotic state is not really lost.

That in the hypnotic state the subject is not really unconscious.

That the complete surrender of volition is only apparent, but that the subject really supervises the whole process, and will not yield to a suggestion really harmful to himself or contrary to his moral dictates.

That medico-legally it is unnecessary and impossible to distinguish between hypnotic and simulated sleep, but that in certain special cases the reality of the hypnotic state may be admitted as an extenuating circumstance.

That no suggestion can be insinuated in the hypnotic state which the operator could not have persuaded the subject to accept in the waking state, and that his responsibility is therefore the same in the two cases.

That hypnotic phenomena, like hysterical phenomena, are in a sense half-simulated, and are quite different from the disabilities of organic disease. Thus a hypnotic or hysterical analgesia will never lead to the injuries which occur in syringomyelia and other organic conditions.

That psychotherapy in the waking state will accomplish all that hypnotism can accomplish, except in rare cases where the patient has an ineradicable idea that he will be cured by hypnotism.

HAROLD CROSS.

HYPNOTISM IN RELATION TO SURGICAL ANÆSTHESIA.

(238) EDWIN ASH, *Proc. of the Roy. Soc. of Med.*, Jan. 1911, Sec. of Anæsthetics, p. 13.

THE author's experience is that only about one in ten or twelve persons is likely to be sufficiently influenced by hypnotism to become insensible to pain at suggestion. He considers that at present the analgesia of the hypnotic state is not trustworthy from the point of view of surgery, but it may be strongly reinforced by the superimposition of a suggested anæsthesia. The use of post-hypnotic influence is quite unreliable.

J. H. HARVEY PIRIE.

THE TREATMENT OF EXOPHTHALMIC GOITRE WITH SPECIFIC

(239) **ANTI-SERUM.** A. E. TAYLOR, *Journ. Amer. Med. Assoc.*, No. 4, 1911, p. 263.

A NOTE of the results of treatment of cases of exophthalmic goitre with an anti-serum prepared by Beebe's method. Rabbits are immunised against the proteid obtained from thyroid glands removed by operation from cases of Graves' disease, until their serum, in a dilution of 1 in 10, gives the specific reaction. The serum is then taken and rendered sterile by addition of trikresol.

The author found that this serum produced neither curative nor toxic effects in cases of Graves' disease.

J. G. GREENFIELD.

Reviews

BEITRÄGE ZUR PATHOLOGIE DES STOFFWECHSELS BEI PSYCHOSEN. DRITTER TEIL: FUNKTIONELLE PSYCHOSEN. MAX KAUFFMANN (Halle a. S). Jena: Gustav Fischer, 1910, pp. 238. Pr. 7 M.

THE author in two previous volumes has published numerous observations on pathological metabolism in general paralysis and in epilepsy; the data were given in great detail, while the results of the observations as a contribution to the pathology of the disorder were somewhat difficult to appreciate. The present volume shows the same characteristics as its two predecessors: numerous data are presented, but it is extremely difficult to see

how they are to be woven into the general fabric of our knowledge of the psychoses. The author indulges in many digressions into hypothetical speculations, without, however, giving his hypotheses any very wide application, or discussing their validity in view of somewhat wider considerations than those involved in his chemical researches. His association of ideas is very free, and leads to suggestions which may be stimulating, but frequently leave the impression of being based on very insufficient data: thus in suggesting the employment of agents for stimulating cellular oxidation in the anxiety-psychosis he refers to a case of tabes which had derived much benefit from injections of spermin.

After two initial chapters on general considerations and discussion of methods, the author discusses numerous clinical groups—anxiety-psychoses, psychoses with motility disorders, mania (Cap. III., IV., V.); in the tenth chapter he again refers to special disorders in certain psychoses. In Chapters VI. to X. numerous special questions of metabolism are discussed. The author's conclusions at the end of his chapter on anxiety-psychosis illustrate well the general character of the volume. In one case hyper-oxidation persisted even during paraldehyde sleep, induced to eliminate the forced respiration; the hyper-oxidation is therefore considered to be primary, and possibly a cause of the anxiety-psychosis, and in this connection reference is made to the occurrence of anxiety in hyper-thyroidism.

As an example of the author's tendency to give somewhat empty theoretical explanations, one may take his remarks on the voracity of the general paralytic; this polyphagia, according to him, may be due to the fact that in advanced cerebral disorders certain inhibitions disappear, or that the cortical areas which are important with regard to the desire for food are affected and are in an irritative condition. The special advantage of the book lies in the fact that the actual observations are given in detail and have a very positive value, whatever may be the value of the general speculations or the bearing of these observations on our knowledge of the various psychoses. C. MACFIE CAMPBELL.

**DER EINFLUSS GEISTIGER ARBEIT AUF DEN KÖRPER
UNTER BESONDERER BERÜCKSICHTIGUNG DER ER-
MÜDUNGSERSCHENUNGEN.** W. BETHGE. Halle: Carl
Marhold, 1910, pp. 51. M. 1.20.

THE first part of this pamphlet is devoted to a clear and careful summary of the results of investigations directed to ascertain the relation existing between mental and bodily activity. The effect

of intellectual work on the general circulation of the blood, on the breathing, as well as on the temperature of the brain and the condition of its cells, is described as it has been ascertained by such workers as Mosso, Leumann, Binet, Preyer, Verworn, Cyon, etc. Full references are given.

Having shown the complicated and far-reaching nature of the influence of mental activity on the bodily functions, the author proceeds to what he regards as the practical part of his task, namely, an inquiry into the point at which actual physical injury results from mental work. This is obviously the question of fatigue, and a brief reference is made to the work done by Mosso and Weichardt on the fatigue toxins. The two modes of measuring fatigue, by examining its influence (1) on the output of intellectual work, and (2) on some physical function, such as muscular force or sensibility to pain, are then distinguished, and the experimental results of the chief workers in this field, such as Ebbinghaus, Rivers, Kraepelin, etc., indicated.

The danger of overstrain in both children and adults is next considered, and the great desirability of some objective gauge of unphysiological fatigue pointed out. This is of practical importance for every one, as the subjective sign, viz., the feeling of fatigue, is easily set aside and neglected. Hence dangerous nervous exhaustion may appear suddenly without any marked warning.

While not making much original contribution to our knowledge of the subject, the pamphlet brings together in short compass and with commendable clearness a great number of scattered investigations. The complexity of the problem of fatigue is such that the interpretation of the experimental results is full of uncertainty. It is much to be desired that the different tests should be employed by one investigator in such a way as to see whether they confirm one another. An attempt of this nature was made some years ago in America with results that seemed to discredit some of the supposed tests. Further investigation on the same lines is required.

MARGARET DRUMMOND.

ALIÉNÉS ET ANORMAUX. J. ROUBINOVITCH. Paris: F. Alcan, 1910. Pp. 317. 6 fr.

THIS volume is one of the International Scientific Library published by Alcan, of which over 100 have already been issued. Like many of these, the one under notice is not written for specialists, but for the general public, whom it is desired to interest in the subject of the insane and the mentally defective. Dr Roubinovitch makes no attempt to present a systematic treatise, but selects some of the more striking features of his subject, and

dilates on these in non-technical language. The following headings of chapters may be chosen to illustrate his manner of dealing with it:—What is insanity? Why does one become insane? Alcoholism and homicidal mania. The education of parents and children in the injurious effects of alcoholism, etc. A large part of the book is also directed to the question of the education of mentally defective children. This is no doubt occasioned by the passing by the French Parliament in 1909 of a new law providing for the education of such children in special schools. It is hoped by this means to secure for them such education as their mental faculties permit, and so enable them to develop into fairly useful citizens instead of into chronic criminals or lunatics, as so many of them are only too prone to do. This is the true preventive method, now universally recognised as the better in the treatment of disease. No doubt it entails a good deal of initial expenditure, but this would in various ways be amply repaid in the future. There is at present in this country an increasing flow of public opinion in the same direction, and the results of the French law will be watched with keen interest here. The book should prove specially interesting to lawyers, teachers, and all who take an interest in social progress.

JAS. MIDDLEMASS.

BOOKS AND PAMPHLETS RECEIVED.

"Memorias do Instituto Oswaldo Cruz," Ano 1910, Tomo ii., Fac. ii. Rio de Janeiro: Mangueiras, 1910.

Flexner and Clark. "Experimental Poliomyelitis in Monkeys: Ninth Note—Immunity Principles," etc. (*Journ. Amer. Med. Assoc.*, Feb. 18, 1911).

"Traité International de Psychologie Pathologique. Tome ii.: Psychopathologie Clinique." Paris: Félix Alcan, 1911. 25 frs.

"Rassengna di Studi Psichiatrici," Vol. i., f. 1, 1911.

"Report of the Government Hospital for the Insane to the Secretary of the Interior for the Year ended June 30, 1910." Washington: Government Printing Office.

Robert Jones. "Para-Myo-Clonus Multiplex and Insanity" (*St Bartholomew's Hosp. Reports*, Vol. xlv.).

Ramsay Hunt. "The Thenar and Hypothenar Types of Neural Atrophy of the Hand" (*Amer. Journ. Med. Sc.*, Feb. 1911).

Ivar Wickman. "Die akute Poliomyelitis bzw. Heine-Medinsche Krankheit." Berlin: Julius Springer, 1911. M. 5.

Lorrain Smith and Mair. "Fats and Lipoids in Relation to Methods of Staining" (*Skand. Arch. f. Physiol.*, Bd. 25, 1911).

Review of Neurology and Psychiatry

Original Articles

THE CONTRALATERAL PLANTAR REFLEX.

By ARTHUR WILLARD FAIRBANKS, M.D.,

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and Assistant Physician for Nervous Diseases at the Children's
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College.

From the Department for Nervous Diseases, Boston City Hospital.

SEVERAL forms of contralateral plantar reflex have been reported by different observers. It will therefore favour clearness in understanding the reason for this communication to give at the start a concise description of the varieties thus far noted.

First.—It has been noted that, in certain individuals, without disease of the nervous system, stroking the sole of one foot sometimes is followed by flexion of the other great toe, as well as the great toe of the foot stroked (Fig. 2, Diagram 3).

Second.—It has been noticed, in certain instances of lesions of the upper motor segment, whose clinical signs are those of hemiplegia, with typical extensor response of the great toe on stroking the sole of the paretic foot, that when the other sole was stroked the great toe of the paretic foot flexed (Fig. 3, Diagram 3).

Third.—It has occurred in cases, both of double hemiparesis and in instances of double lesions of the pyramidal tracts in the cord, with extensor response of the great toe of either foot when

its own sole was stroked, that a simultaneous flexion of the opposite great toe took place (Fig. 4, Diagram 3).

Fourth.—In a case of double extensor response there occurred a simultaneous extension of the other great toe, each time either foot was irritated (Fig. 5, Diagram 3).

Fifth.—In a case of double extensor response, with one side paretic, there occurred simultaneous flexion of the great toe of the paretic side only (Fig. 6, Diagram 3).

Sixth.—In a case with a very slight right paresis, from an old lesion, but with normal plantar flexion, and a severe recent left hemiparesis with pronounced Babinski, flexion of the opposite great toe occurred every time the other sole was stroked, *i.e.* double contralateral flexor reflex (Fig. 7, Diagram 3).

Seventh.—I have myself had under observation, in my clinic at the City Hospital, a case in which a double crossed extensor response was present, without *direct* response of any kind, either extensor or flexor (Fig. 8, Diagram 3).

This case was one of cerebral syphilis, with probably both arterial and meningeal infiltration, in a man of twenty-four, who presented evidence of interruption in both pyramidal tracts, manifesting itself on the left side as a hemiplegia, on the right side by aphasia and by increase of all the reflexes, and at one period in its course a double Oppenheim, and, what I do not recall having seen previously reported, a double contralateral Oppenheim.

My attention was called to the behaviour of the plantar reflex by my assistant, Dr Myerson, and the condition was confirmed on many subsequent examinations. In a total period of about three months that the man was under observation a direct Babinski on the actually paralysed side was never found, although he was examined by several different examiners, each independent of the others. There was no Oppenheim during the first few weeks, but it then appeared on the paralysed side; a few weeks later became double, and at this time the contralateral Oppenheim response was pronounced.

While, as said, there was no direct extensor reflex, there was a typical and pronounced extension of the right great toe, with spreading of the other toes, whenever attempt was made to elicit the Babinski on the left (the paralysed) side. A similar but less pronounced response occurred on the paralysed side when the

right sole was irritated. It should be here noted that when this was first noticed the man had been under vigorous antisyphilitic treatment for seven weeks, and had so far recovered from the left hemiplegia and the aphasia that he could walk well and talk with fair facility. In fact, his improvement was so rapid that he began to talk in two weeks, and to walk in three weeks, after the onset of the trouble.

After many weeks of observation in the Out-Patient Department the man dropped from view for four months. On hunting him up at his home I learned that he had continued the treatment faithfully, and felt perfectly well. All the reflexes were then normal, and he presented a perfectly normal direct flexor plantar reflex on each side.

While it is at present difficult to explain with complete certainty these multiple variations in the plantar reflex phenomena, it seems to me that an important step in the right direction is taken by the hypothesis proposed by my colleague, Dr Knapp, namely, that the extensor response is a purely spinal reflex; the flexor response a cerebral reflex. The flexor arc consisting of at least four segments, namely: from the skin to sensory medullary centres; from these centres to the Rolandic area; from the Rolandic area to the anterior horns; from the horns to the muscle. It is at once evident that the central motor neurone-segment constitutes a part of this arc. Consequently a lesion in this segment breaks the arc, and the flexor reflex is lost, and replaced by the spinal extensor phenomenon.

Having accepted the hypothesis, we shall find ourselves in a much more favourable position to explain the apparent eccentricities of the plantar reflex, of which we have spoken. Let us see, therefore, how far we can explain some of these phenomena. The explanations are, of course, purely hypothetical. They depend first, as said, upon the acceptance of the view of Dr Knapp in regard to the nature of the flexor reflex; second, upon the assumption, which I take the liberty of making, that some of the fibres of the so-called direct pyramidal tract arc in fact *actually* direct, that they do not cross at the anterior median fissure of the cord. If we refer to the accompanying schematic representation of the centripetal sensory paths from the plantar surface to the cerebral cortex, and the centrifugal motor paths from the cortex to the great toe, together with the supposed spinal reflex arc in the

umbar cord, my reasoning will be clearer than would be possible without some graphic illustration.

The representation is merely diagrammatic, especially in the

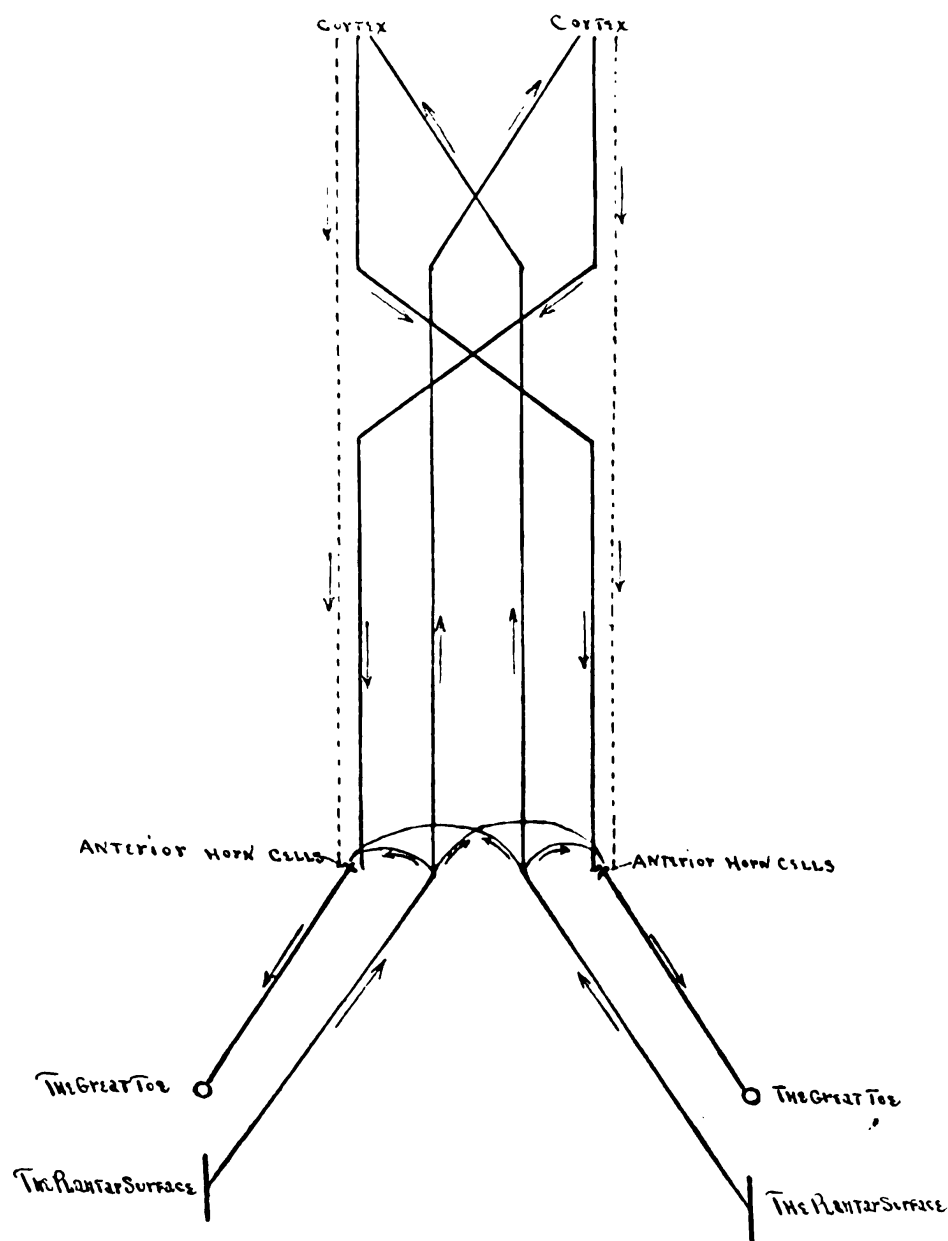


DIAGRAM 1.

portrayal of the neurone system of the purely spinal portion of the reflex arc. For the sake of clearness I have purposely omitted drawing the different neurone segments and their

synaptic connections that are supposed to form the different parts of an arc system.

I shall refer to them, as mention of them is necessary for us to understand why a reflex impulse takes a different course at one time than at another.

Their representation is not necessary in the diagram, and would tend rather to confuse than to help us.

The dotted lines in the diagram represent the hypothetical direct fibres of the pyramidal tract. The rest of the diagram is self-explanatory.

We have first of all to clear from our minds the idea that the facility of transmission of a reflex impulse has mainly to do with the distance travelled. Probably of chief importance is the number of breaks (synapses) such impulse meets with in its course, and the degree of resistance which each synapsis (or, as Sherrington graphically terms it, "neurone threshold") offers to the entrance and passage of the impulse. Therefore, a course to the brain may offer less resistance than a relatively much shorter course in the cord, either because there are fewer breaks, or what is probably the truth, because the shorter neurones in the cord offer higher resistance. Then also, as Sherrington has shown, two or more neurones often vary greatly from one another in the facility with which they admit and transmit impulses.

To quote Sherrington (p. 155):—"The different resistance seems more probably referable to differences in the facility of conduction at different synapses. At each synapse there is a neurone threshold. At each synapse a small quantity of energy, freed in transmission, acts as a releasing force to a fresh store of energy not along a homogeneous train of conducting material as in a nerve fibre pure and simple, but across a barrier which, whether lower or higher,¹ is always to some extent a barrier. There is abundant evidence that different synapses differ from one another."

As a diagrammatic representation of this fact I take the liberty of reproducing Sherrington's diagram, quoting freely, but not always verbally, from his explanation of this diagram (*vide* Diagram 2).

"A receptive neurone A enters the cord and forms synaptic

¹ *I.e.* In resistance.

connections with three neurones; the neurone threshold at the synapse with one of the neurones (2) is higher than that at the synapses with the others (1). Each of the intraspinal neurones in its turn forms two synaptic connections with two neurones, and in these cases also the threshold resistances are of different heights, indicated as before by 1 and 2.

"On the view that the action of one neurone upon the next is that of a releasing force, liberating a potential system across a

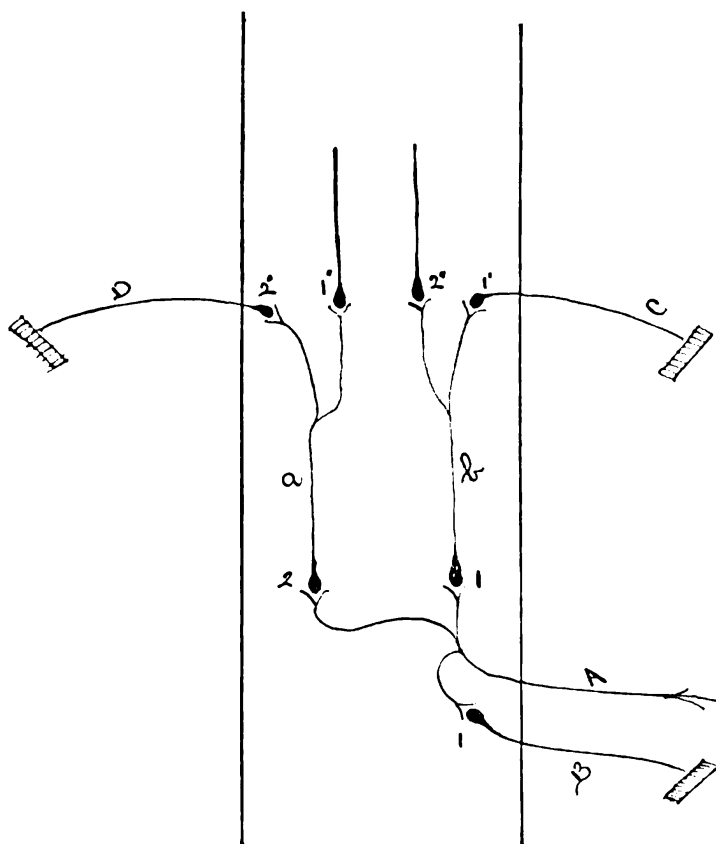


DIAGRAM 2.

barrier whose exact resistance we do not know, it is impossible to predict the sum total of the resistance along the whole chain."

To refer to the diagram: We can conceive of an impulse, not only sufficient to excite the reflex arc A B, but also sufficient to overcome the threshold resistance at 2 a; not, however, sufficient to pass the threshold of 2' D. This same impulse may, however, pass a 1'' with fair facility, or it may fail to cross even this resistance.

It is thus clear that very small degrees of threshold resist-

ances, at individual synapses, may aggregate a total resistance of very considerable and varying degree through different reflex chains.

Let us turn now to our diagram of the various forms of contra-lateral plantar reflex (Diagram 3), and the schematic representation of the possible reflex arcs in the cord and brain (Diagram 1). The first figure indicates at a glance the normal unilateral plantar reflex and requires no further notice.

Let us consider first those rather rare but normal cases where irritation of one sole causes double flexor response, as indicated in Fig. 2, Diagram 3.

In such instances we obtain our crossed flexor response through the direct pyramidal fibres, and we may assume that more pyramidal fibres are direct in these otherwise normal individuals than in the average normal individual.

The next step brings us to the consideration of the abnormal. For the sake of clearness, and *in order to keep constantly in view the type of crossed reflex with which we are dealing*, all of the unilateral paretic conditions are indicated on the left half of the figures (the half to the right hand of the reader). Obviously it makes no difference in the argument, and obviates the confusion that would result in transferring the lesion back and forth from one side of the diagram to the other, according to the clinical case represented.

To condense as much as possible the text of my paper, I have indicated by the side of the diagram the observers who have reported the respective forms of contralateral reflex. I have thought it best, after some deliberation, not to burden the main diagram of the reflex paths with letters or numbers showing possible site of the lesions. They will be evident by a brief study of the diagram. I may also mention that it is of advantage to use one or two small pieces or slips of coloured card, laid across the diagram at different points to indicate the site and extent of the lesion in each respective case. This obviates the necessity of using new diagrams. For each time the slips are removed it leaves the field clear for the indication of another and differently located lesion.

Fig. 3. This form of contralateral reflex is produced by a unilateral cortical or capsular lesion, the interruption involving both the direct and crossed fibres. By a glance at the diagram

it will be evident that stimulation of the right sole will produce, through the crossed pyramidal tract, immediate flexor response in the great toe of that foot, and at the same time a flexor response of the other great toe through the direct pyramidal tract of its side, while the impulse produced by stimulation of the left sole could only produce a flexor response through the crossed pyramidal tract, coming from the opposite internal capsule (or cortex), which is blocked by the lesion. There is only one course then for the impulse, and that is for it to take its course through the grey matter of the cord to the anterior horn, preferably of its own side; sometimes, as we shall see in the fifth figure, irradiating over into the anterior horn of the other side by the route of a crossed tract, indicated in the lower part of the diagram, through the grey matter of the cord.

Fig. 4. This may be produced by a double interference with the conduction through crossed pyramidal fibres in the capsules—that is, by a bilateral lesion, even though such lesion may not be sufficient to cause actual bilateral paralysis (it usually shows its presence, however, by increase of the deep reflexes, the presence of the ankle clonus, Oppenheim, Rosalimo, Strümpell, etc.). It is probably usually a vascular condition, not necessarily a hæmorrhage, although evidence of the latter is often present on one side, and sometimes on both.

This same form of contralateral reflex may occur when both lateral (crossed) pyramidal columns in the cord are the seat of the disease. This I regard as the explanation of Knapp's case, which was a case of ataxic paraplegia.

Fig. 5. This phenomenon is more likely to occur with a fairly diffuse lesion of the cord, involving to a greater or less degree all of the pyramid fibres, both crossed and direct. If these are cut off in the diagram, it will be clear that the only possible course of the plantar impulse will be across the extensor arcs in the cord below the lesion. The degree of resistance offered by the crossed extensor arc, or the intensity of the stimulus applied to the sole, will determine whether or not the impulse irradiates over to the opposite horn through this crossed arc. Bramwell's case was a cord lesion with this phenomenon.

This form of contralateral reflex might also be conceived as resulting from a complete bilateral lesion in the internal capsules, but this would probably be much more unusual than its pro-

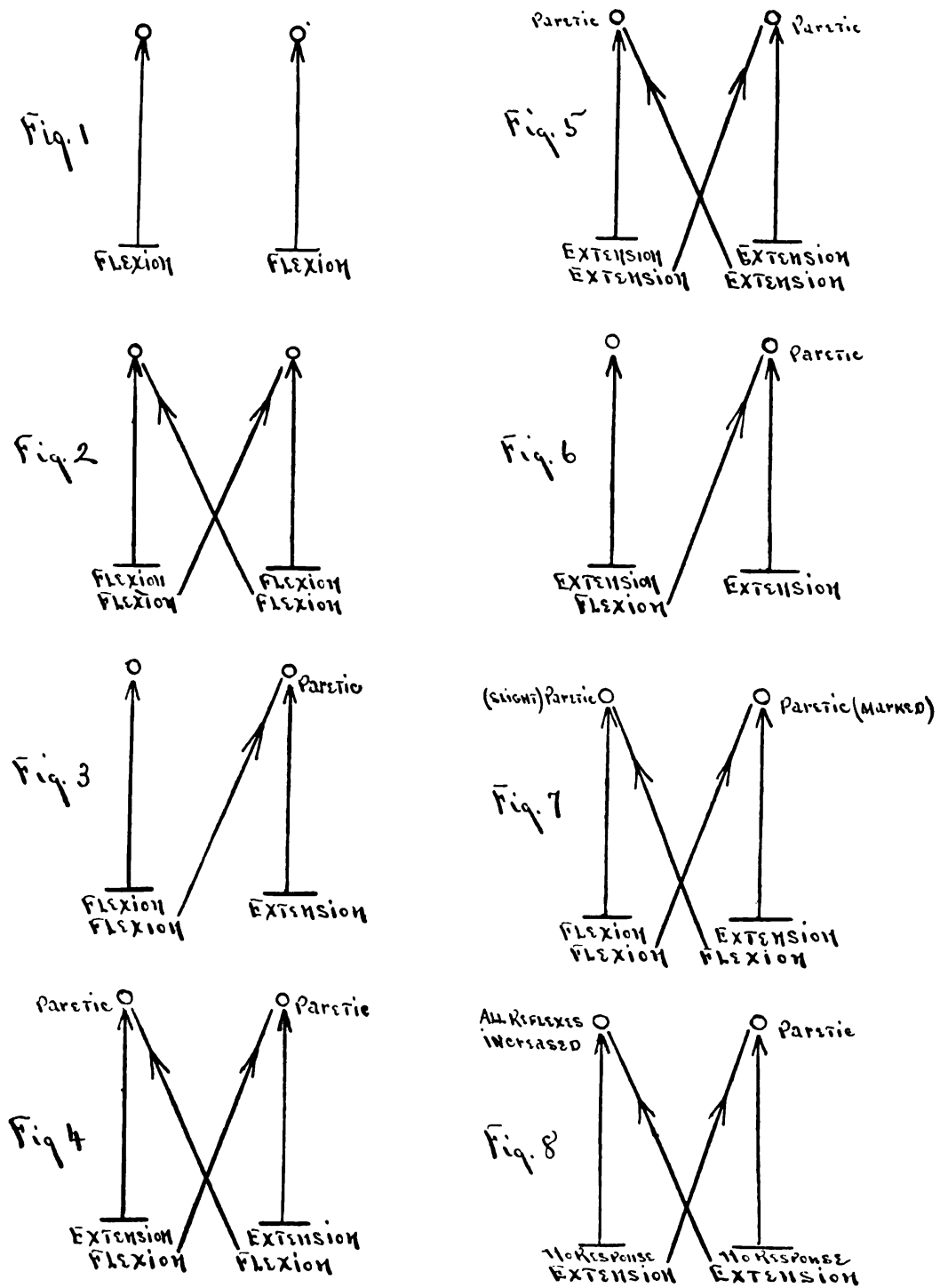


DIAGRAM 3.

duction by a bilateral cord lesion (hæmatomyelia, fracture, dislocation, tumour, etc.).

Fig 6. A lesion in one half of the brain (the right) involving all the fibres of the pyramidal tract, both crossed and direct on that side, and a condition causing interruption in the pyramidal tract of the other half of the brain (the left according to the diagram), a greater or lesser number of the direct tract fibres remaining free (arterial disease).

It is obvious that if we completely cut off the pyramidal tracts on the right, while the pyramidal tract on the left is so much interfered with that only impulses through the direct tract can pass, an extensor response on the left is the only reflex that could occur by stimulation of that sole. If, however, we stimulate the other (the right) sole, we may still obtain flexion on the left through the direct pyramidal tract of that side. It is equally clear that with a lesion of this character an extensor response on the right is also the only reflex that can occur on that side, for there is no way by which the stimulus, once reaching the cortex from the right sole, can send back an impulse to the flexors of this great toe.

Bramwell's case was in a man of sixty years, with unquestionable arterio-sclerosis. The post-mortem showed a large hemorrhage that had ruptured into the lateral ventricles.

This same phenomenon could be produced by a lesion, degeneration, or sclerosis, in the lateral tracts in the cord, with coincident implication of the direct fibres of one side. (Note analogy to Fig. 4, especially with reference to Knapp's case.)

In an instance, as illustrated by Fig. 6, it would be the direct fibres on the right half of the cord, thereby preventing any possibility of obtaining a crossed flexor response on that side.

Fig. 7. A lesion of one internal capsule involving, however, mainly the crossed fibres, permitting the passage of some impulses through fibres that later form the direct tract to the same side as the lesion, or the side opposite to the paralysis. It differs from the most often observed contralateral phenomenon (Fig. 3) only in that the lesion in the internal capsule is not quite so extensive, and therefore does not prevent transmission through the direct tract of that side.

A similar phenomenon might occur with a lesion of one of

the lateral pyramidal tracts in the cord. In that case, of course, the lesion would be on the side on which the Babinski is present.

Steinberg's case was a man of sixty years who had a left hemiplegia. Several months previous he had a right hemiplegia, the only vestige left being a very slight weakening of the right arm and leg. In a case such as this we might have obtained the result indicated in Fig. 4 or Fig. 6, if recovery from the lesion in the left internal capsule had not been so nearly complete.

Fig. 8. This man unquestionably had a lesion in the right internal capsule or thalamic region, probably arterial thrombosis from syphilitic arteritis. He also had considerable interference with conduction through the pyramidal tracts of the left cerebral hemisphere, as shown by the increase of all the reflexes, the presence of double Oppenheim and Rosalimo. During the entire period of observation, covering many weeks, this man never presented a direct Babinski on either side, although examined on many occasions, by several examiners, each independently of the other. Four weeks after the onset of the hemiplegia, at a time when he was again able to walk and to talk, he showed the phenomenon indicated in the figure. There was a clearly pronounced extensor response with spreading of the toes on the right foot when the other sole was stimulated, and a similar occurrence on the left when the right sole was stimulated. Neither toe extended or flexed when the sole of its own foot was stimulated. This case is, I think, the first reported where such a condition was present.

We may count for the contralateral extension on the basis of what we unquestionably had in this man; a double interference with conduction through the pyramidal tracts, but to account for the persistent absence of the direct extension we must seek for some explanation probably in the cord itself. The short arc indicated in the lower part of the large diagram, running from the posterior nerve root directly into the anterior horn cell (the ordinary extensor arc), may have been interrupted by some arterial lesion, or the posterior root itself at that particular level may have been affected by vascular or meningeal specific involvement, and the passage of impulses just sufficiently interfered with to cut off this reflex. If we admit this possible explanation we must assume that the crossed *spinal* reflex tracts

(*vide* diagrams) pass into the cord at a higher level than the direct, perhaps one nerve root higher, or if they enter by similar roots, that they take a somewhat higher course in the grey matter of the cord; this latter supposition, in any event, is probably the fact. We know for a certainty that any given area of skin is supplied by fibres entering not through a single root, but by at least three different roots. This Sherrington has proved

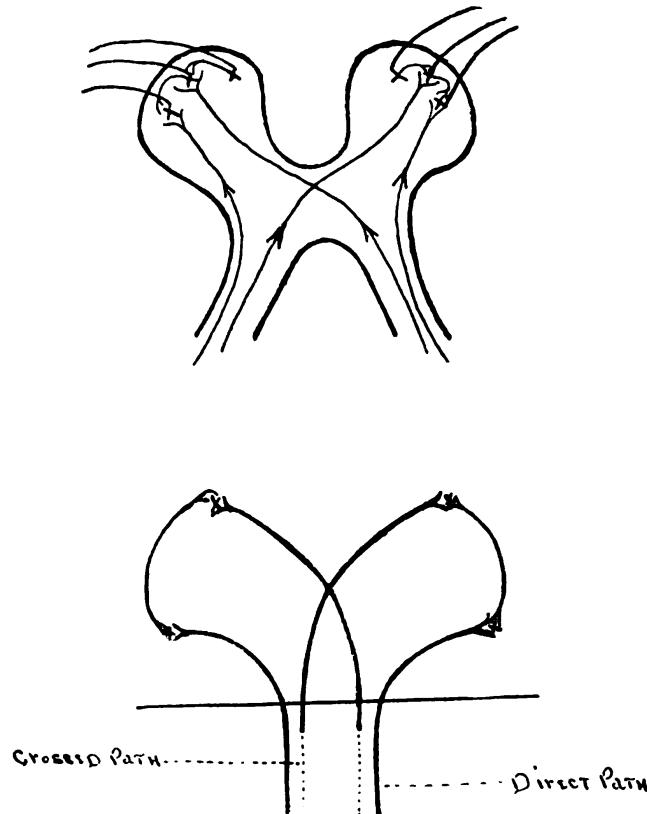


DIAGRAM 4.

by animal experimentation; and we now know by the clinical results of the Foerster operation of resecting of the posterior roots that the skin of any given area of the body is supplied through at least three roots. A fact in this case that indicates that even the direct extensor reflex of the great toe may be produced by stimulation through roots at a higher level, when the ordinary direct extensor reflex from the sole is not possible, is the occurrence in our case of a double Oppenheim reflex, at the very time when the direct Babinski was impossible.

Still more interesting, as opening a field for speculation

concerning this spinal extensor reflex, is the fact that at one time our patient presented a contralateral Oppenheim. I am not aware that this has been reported.

To return now to our general consideration of the subject of contralateral plantar reflex. We must assume, first, a "path of election" which the reflex impulse takes if it can; second, two alternative paths, one of which is selected by the impulse if choice is open to it, the second of the two alternatives being the final and only recourse left to the reflex impulse if the other two routes are blocked. Under normal circumstances the elective choice depends upon the existence of lesser resistance along that path, not upon intrinsic inability of the impulse to take the alternative course. If the energy of the reflex impulse is dissipated along this path of lesser resistance, there is none left to irradiate over into the alternative path. If, however, the elective path is impossible, the primitive energy is all thrown into the alternative route, and we obtain a response dependent upon the passage of the impulse through this route. If the energy of the impulse is sufficient, or the resistance through the second alternative path relatively but little more than that through the first alternative path, some of the impulse irradiates over into this third route, and we obtain additional phenomena, due to the passage of some of the primitive energy by this path.

We must, therefore, consider our routes of selection by reflex energy to consist of the following divisions:—

- 1st. The Path of Election.
- 2nd. The First Alternative.
- 3rd. The Second (and usually final) Alternative.

Animal experiments show, however, that the facility of transmission through the crossed tracts in the cord at a given level vary in different animals, and even in the same animal at different seasons. It also varies at different levels of the cord, being usually much more easy in the lumbar than in the cervical region.

If the assumption is correct that the flexor response is a cerebral and the extensor response is a spinal reflex, we must consider the flexor path to the brain, in the human being, the path of election, the short extensor path to the same side of the cord the first alternative, while the longer extensor path to the opposite side of the cord forms the second alternative, and usually

the final one. In favour of such an hypothesis are the following facts :—During the first year of life the pyramidal tracts from the cortex to the grey matter of the anterior horns are incompletely developed. During this period the plantar response is invariably extensor in character. During this period the predominance of spinal activity over cerebral “inhibition” is a well-known physiological and clinical fact.

With the myelinisation of the pyramidal fibres towards the end of the first and the beginning of the second year comes a constantly increasing power of control of the brain over spinal activity, which grows ever greater as the individual develops. Coincident with this predominance of cerebral over spinal activity is the gradual disappearance of the plantar extensor reflex, and its replacement by the normal flexor response. So long as the integrity of this cerebral influence is maintained, just so long does the phenomenon of plantar flexion persist. But at any time in the life of the individual, even in maturity, circumstances may temporarily restore the preponderance of spinal over cerebral activity. Such is the case in certain toxic states, notably in strychnine and tetanus poisoning. In these states extensor reflex action always predominates over flexor response. This fact has been noted not only clinically, but also in numberless experiments on animals. While true, in a broad sense, of all reflex action, as a matter of common physiological observation (*vide* Sherrington, p. 159), it is also true of the more restricted reflex phenomenon that we are studying, and Babinski himself noticed the occurrence of this reflex that bears his name, in a case of strychnine poisoning (p. 322).

It is well known that one prominent effect of strychnine is to stimulate and greatly increase spinal excitability.

Another fact that I believe strongly favours the probability of the flexor response being a cerebral reflex is Sherrington's discovery, by animal experiments, that flexor reflex impulses travel much more readily downward than upward through the cord (p. 163). Also he notes that a stimulus applied to one fore-foot excites reflex action in that extremity, but if the impulse goes further it excites a response in the hind leg of the same side; less often in the hind leg of the opposite side; and least frequently of all in the fore-leg of the opposite side (p. 165).

When the response occurred on the side on which the irritation was applied, that response was of the flexor type, both in the limb irritated and in its homonymous fellow; whereas the reflex when it occurred in the opposite limb was usually of the extensor type.

This seems to me to indicate that in these animals the response of the side opposite to the side irritated is the result of a purely spinal (extensor) reflex, the impulse irradiating across the cord in the lumbar region more readily than it could make its way upward to the brain. A similar low resistance in the spinal neurone thresholds does not exist in the cord level corresponding to the fore limbs. Here the impulse prefers the path downward to the hind limb of the same side, and if there is sufficient energy left after exciting reflex activity in this lower limb, the surplus overflows across the cord and causes, as said, an extensor response on the part of the other hind limb. If both limbs are irritated at the same moment, we would naturally expect a double flexor (cerebral?) response, and this is exactly what we find to be the case. We must remember that we are now speaking of conditions in animals, and in normal animals. A somewhat greater facility of transmission through spinal arcs is what we would naturally expect in normal animals, owing to the greater relative activity of spinal reflex phenomena as compared with similar phenomena in the normal human being.

The occurrence of the extensor phenomenon has been noticed after epileptic attacks. Babinski himself mentions such an instance, and it has been noticed by others. It is well known that for a time following epileptic attacks, in some individuals, there exists a partial inhibition of cerebral function. This condition, combined with the recent excessive activity of the motor centres of the spinal cord, is adequate explanation of the re-appearance of the primitive spinal reflex.

On the basis of these facts I believe that we are justified in holding the hypothesis that the two reflex phenomena, flexion and extension, have two separate centres, the one in the brain, the other in the cord. On this basis only is it possible to explain the otherwise paradoxical behaviour of the plantar reflex in the cases reported.

I offer the explanation of these variations of the plantar

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phenomena with some hesitancy, and only after considerable study of the subject, because it involves so radical a departure from our previous conception of certain reflex phenomena. However, perhaps the publication of my conception of the subject may excite the publication of some better explanation, in which case I shall be only too glad to relinquish my own position.

In closing, I desire to thank the gentlemen whose material I have so freely used.

591 BEACON STREET.

REFERENCES.

1. Babinski. "Du phénomène des orteils et de sa valeur semiologique," *Semaine médicale*, 1898, p. 321.
 2. Byrom Bramwell. "Note on the Crossed Plantar Reflex," *Review of Neurology and Psychiatry*, 1903, p. 795.
 3. Byrom Bramwell. "Case of Cerebral Hæmorrhage," *Clinical Studies*, 1905, p. 301.
 4. *Ibid.*, 1906, p. 92.
 5. *Ibid.*, 1907, p. 249.
 6. Knapp. "The Mechanism of the Plantar Reflex, with Special Reference to the Phenomenon of Crossed Reflex," *Review of Neurology and Psychiatry*, 1907, p. 825.
 7. Klippel, Weill et Serguéeff. "Reflexe contralateral plantaire hétérogène," *Revue neurologique*, 1908, p. 690 ; *Nouvelle Iconographie d. l. Salpêtrière*, 1908, p. 270.
 8. Steinberg. "Ueber einen kontralateralen Plantar-Reflex," *Berliner klin. Wochenschrift*, 1908, S. 2183.
 9. Byrom Bramwell. "Note on the Crossed Plantar Reflex," *Review of Neurology and Psychiatry*, 1911, p. 49.
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THE DIAGNOSIS OF CEREBRAL SYPHILIS.¹

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THE term brain syphilis is often used clinically in a somewhat loose manner. Pathologically there are three main types—meningitis, endarteritis, and gumma—but in each individual case there is usually a combination of two or all of these elements.

In the majority of the cases the symptoms, according to Oppenheim, Nonne, Mott, and numerous other observers, develop within the first three years after syphilitic infection. Mott quotes Kahler as describing a case which occurred while the primary sore was still unhealed; Gilles de la Tourette and Hudelo have reported a case which occurred four weeks after infection; Gilbert and Lion report that in sixteen out of forty-seven cases the symptoms appeared three to six months after the chancre; Naunyn, in a review of seventy cases with autopsy, personal and from the literature, found that 84.3 per cent. occurred within ten years after primary infection.

In thirteen of my cases of brain syphilis in which I have been able to get an accurate account of the date of infection and of the onset of the mental symptoms, the average interval elapsing between infection and onset of symptoms has been four and a half years—the shortest period being five months and the longest fifteen years.

From the above statistics it is readily seen that practically all cases of brain syphilis occur during the first ten years after primary infection. On the other hand, it is a well-known fact that general paralysis rarely develops during the first ten years after syphilitic infection. In forty-five cases of general paralysis in which I have been able to get an accurate account of the date of syphilitic infection, and the onset of the general paralysis, the average interval elapsing before the onset of mental symptoms was fifteen years.

To take up the clinical picture of cerebral syphilis:

The symptomatology is often very characteristic. The

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most frequent physical symptoms are: headaches, dizziness, vomiting, sleeplessness, cranial nerve palsies, optic neuritis, hemiplegia, etc., and these symptoms may constitute the whole clinical picture. In addition to these physical symptoms, mental symptoms may and frequently do develop. As a general rule the mental disturbance is acute in onset, and is characterised by a dull, delirious, or confused state, with disorientation, poor power of retention of recent impressions, and sometimes auditory and visual hallucinations. A case which well illustrates some of the points mentioned was that of a man, 42 years of age, who, nine months after syphilitic infection, was admitted to the clinical service of the Psychiatric Institute in a confused, semi-delirious state. He heard voices calling on him, to which he reacted with a certain amount of fear, was disoriented both for time and place, and had a very hazy recollection of events preceding admission. He complained of headache and dizziness, his pupils reacted promptly to light and on accommodation; both optic discs showed a slight optic neuritis; tendon reflexes, speech, etc., showed nothing abnormal. The patient rapidly improved under anti-syphilitic treatment, and two months after admission was discharged as recovered.

In such cases the diagnosis is comparatively simple. Other cases, however, are not infrequently met with in which the clinical picture is extremely complex. Patrick, in considering the differential points between these two diseases, as long ago as 1898, made a statement which still, for the most part, holds true. He said: "The clinical difficulties, errors, and uncertainties are all quite explicable when we reflect that neither disease has a pathognomonic sign, that not a single symptom occurs in either affection that may not be found in the other, and that neither adheres to a fixed type."

The subject is very important from the point of view of prognosis and treatment, and my object in presenting this paper is to emphasise certain symptoms which, in the light of three cases which have come to autopsy, appear to be of importance in differentiating brain syphilis and general paralysis.

The first case is that of E. M., 37 years of age, labourer, who on admission was elated, over-talkative, had a well-marked feeling of well-being. He was somewhat disoriented for time and place, said that the month was February or March (August)

and that the place was Blackwell's Island (Ward's Island). His memory was poor both for recent and remote events, discrepancies occurred in his dates ; he did not express any absurd or grandiose ideas. His grasp on general information was good, he was able to do simple calculations correctly, but his power of retention was poor, as he had forgotten all the three tests given him after five minutes. He did not realise that there was anything seriously wrong with his mind, but said spontaneously, "I am forgetful."

He complained of headache and dizzy spells, and stated that he had had syphilis seventeen years previously, for which he had received mercurial treatment for eight weeks.

His pupils were Argyll Robertson, the fundi normal ; speech showed no defect except occasional sticking over difficult words ; writing showed no defect. Knee and Achilles jerks were equally exaggerated ; tremor of tongue, facial muscles, and hands. The examination of the cerebro-spinal fluid showed marked pleocytosis, positive globulin tests, and positive Wassermann (Noguchi) reaction both with the blood serum and cerebro-spinal fluid.

On account of his headache and dizzy spells it was thought advisable to give him a course of treatment with mercurial inunctions and potassium iodide. In the space of two months his headaches had disappeared, he was correctly oriented, his memory had greatly improved, and there was no deterioration of his personality. At the end of this period he had a series of convulsive spells, at first limited to the right face, then involving the right face, arm, and leg. He improved for a day or two, but remained in a semi-comatose condition. As a last resort he was given '6 gramme 606 ; the convulsions, mostly of a focal nature, soon reappeared, and he died one month after the injection of 606. His blood serum and cerebro-spinal fluid, examined on two occasions after the injection of 606, continued to give a positive Wassermann reaction.

The history of the development of the case showed that one year previous to admission the patient had a spell of unconsciousness, with twitching of the right face. His condition at that time rapidly cleared up, and after a month he was able to resume work again. He remained well until four months previous to admission, when he started to complain of headache, had dizzy

spells, and attacks of vomiting. This was followed by a period of marked mental confusion and disorientation, necessitating his commitment.

The case was an extremely difficult one from a diagnostic point of view, as there was relatively little preponderance of the symptoms in one or other direction to help in differentiating between general paralysis and cerebral syphilis. Owing to the type of onset with headache, dizziness, confusion, the relative absence of defect symptoms, the absence of any speech or writing defect, and the improvement under anti-syphilitic treatment, a cerebral luetic condition was thought to be the more probable.

The autopsy showed the case to be one of general paralysis.

In reviewing the case in the light of the autopsy findings, one finds practically nothing in the mental picture that could have helped one in coming to a correct diagnosis, as euphoria is very frequently met with in cases of cerebral syphilis, and date discrepancies when occurring in a setting of confusion can carry little weight.

The points which should perhaps have been emphasised are : the onset seventeen years after primary infection, the quick return to normal after the first convulsive spell, the Argyll Robertson pupils, the facial tremor, and possibly the positive Wassermann reaction in the blood serum and cerebro-spinal fluid. Two of these points mentioned may be briefly discussed.

Plaut, Nonne, and others have recently emphatically stated that in cases of cerebral syphilis a positive Wassermann reaction very rarely occurs in the spinal fluid, whereas in general paralysis the Wassermann reaction is almost as frequently present in the spinal fluid as in the blood serum.

If the above assertion should prove to be true, the Wassermann reaction will be an extremely valuable diagnostic aid in differentiating between general paralysis and cerebral syphilis, but one must remember that Plaut's statement has not been adequately confirmed by autopsy material, and therefore one should hesitate somewhat before entirely accepting it.

I have recently been somewhat confirmed in this view by a number of acute cases of cerebral syphilis which have given, using the Noguchi system, just as strongly positive reactions in the cerebro-spinal fluid as in the blood serum.

Although the Wassermann reaction is usually an aid to

diagnosis, one must not forget that it is by no means a specific reaction, and it requires to be interpreted with caution and in the light of the whole clinical picture. The following case is a good example:—A man 40 years old, who gave a history of syphilis at eighteen, had for five years previous to admission complained of gradual failure of vision. He presented a dull, drowsy, mildly euphoric state, and had a rather defective memory. Physically he showed a double optic atrophy and active tendon reflexes. The examination of the cerebro-spinal fluid revealed a pleocytosis of 100 cells per c.mm., positive globulin reactions, and positive Wassermann (Noguchi) reaction, both with the blood serum and cerebro-spinal fluid. Mainly on the ground of the reactions of the cerebro-spinal fluid a diagnosis of general paralysis was made. The autopsy showed the case to be one of endothelioma in the region of the hypophysis. There was no evidence of any syphilitic or parasymphilitic affection of the nervous system.

It is interesting to speculate in such a case in regard to the conditions leading to complement fixation.

The presence or absence of Argyll Robertson pupils is probably the most valuable symptom we have, in doubtful cases, in trying to differentiate between general paralysis and cerebral syphilis. Out of my series of twenty-three cases of cerebral syphilis, only two have shown the Argyll Robertson phenomenon. Siemerling, in an analysis of 1639 cases showing Argyll Robertson pupils, found only 1 per cent. to be due to syphilis of the nervous system. J. Michell Clarke, in a series of sixty-nine cases of cerebro-spinal syphilis—forty-eight cerebral and twenty-one spinal—found Argyll Robertson pupils present in only five cases. He concludes that their presence is evidence of a degenerative process of the nervous system of a parasymphilitic nature.

In view of these findings, one may say that the occurrence of Argyll Robertson pupils in cases of cerebral or spinal syphilis is a comparative rarity, and in a doubtful case should make one think much more strongly of general paralysis than of cerebral syphilis.

In general paralysis and locomotor ataxia, on the other hand, upwards of 70 per cent. of the cases, according to the vast majority of observers, show Argyll Robertson pupils. Out of a series of fifty-four cases of general paralysis I have found

Argyll Robertson pupils present in thirty-six. In some cases of general paralysis the pupils do respond briskly to light throughout the whole course of the disease, but in these cases there are usually other signs which would help one in coming to a diagnosis.

The two following cases of cerebral syphilis serve to illustrate further points :—

J. C., a cook, 55 years of age, on admission to the hospital showed a dull, drowsy, apparently confused condition. He admitted excessive indulgence in alcohol, and for three weeks previous to admission had been in the alcoholic ward at Bellevue Hospital. He denied any venereal infection, but had numerous brownish discoloured scars over both legs. He had to be urged to answer questions, his replies were usually monosyllabic, and his speech was so thick that a great deal of what he said was quite unintelligible. He stated that his head felt clear, that he was happy, that there was nothing the matter with him, that he had come to the hospital to join the Order of Foresters. He denied ever having had any hallucinations. He recognised the place as a hospital, but was quite disoriented for time, saying that it was March (June), and that the year was 1906 (1909). He could not be got to give any history of the onset or development of his sickness, or of his personal data, so that one could not get any idea as to the state of his memory.

Physically he kept his head and eyes turned up and towards the left. He presented a right-sided hemiplegia, *e.g.* right face flattened, flaccidity of right arm and leg, sign of Babinski, and absence of the abdominal reflexes on the right side; a right-sided hemianæsthesia, and a right-sided homonymous hemianopia. His tendon reflexes were exaggerated on both sides, but more so on right. His pupils were both irregular, at first they reacted poorly to light, but a few days later they reacted quite briskly both to light and on accommodation. His speech was thick and slurring; his writing could not be tested. The examination of the cerebro-spinal fluid showed an abundant lymphocytosis.

During his hospital residence he maintained the same dull, drowsy, disoriented condition, and constantly wet and soiled himself. He was mildly euphoric, and said that he possessed \$10,000.

Nine days after admission he became more drowsy, refused

to answer any questions, occasional clonic movements were seen in left arm and left leg, and Babinski's sign was present on both sides. He died two days later.

In regard to the development of the case, a friend stated that for ten years previous to admission the patient had not done any steady work. His friend employed him for one year, but six months previous to admission he was noticed to be less efficient, seemed forgetful, would come to work at the wrong time, and finally was discharged four months previous to admission. As our information was so meagre, and as the patient himself was in such a confused condition, no definite diagnosis was arrived at. It was thought, however, that owing to the history of gradual inefficiency, the lack of any subjective head complaints, the euphoria, the somewhat grandiose ideas, slurring speech, and the exaggerated reflexes, that the case might be one of general paralysis with focal symptoms.

The autopsy showed endarteritis of the basal vessels, an obliterative endarteritis of the left middle cerebral artery giving rise to a large area of softening. There was also a moderate degree of syphilitic meningitis.

The essential points which this case serves to illustrate are, that certain cases of brain syphilis may develop, like general paralysis, with a gradual falling off in the general efficiency, and may show a well-marked degree of euphoria with the expression of grandiose ideas. The more one sees of cases of brain syphilis, the more does one become impressed by the relative frequency of the occurrence of a fairly well-marked degree of euphoria in these cases. It seems to me that this fact has been somewhat imperfectly realised, and that we have been too ready to diagnose cases showing euphoria and grandiose ideas, associated with certain physical signs, as cases of general paralysis.

It is true that in cerebral syphilis one rarely meets with the expression of such absolutely absurd or grandiose ideas as in general paralysis, but strict attention should be paid in every case to the setting in which these ideas occur. If the patient is confused they mean practically nothing, but if the sensorium is clear they point more towards general paralysis than to cerebral syphilis. Mental symptoms at all times, however, especially when of the nature of mood changes, are apt to be very misleading, as they depend so essentially on the constitution of the individual,

and consequently it strikes one as safer to be guided as far as possible by the accompanying physical signs.

Both mental and physical signs change rapidly in cerebral syphilis in a somewhat characteristic way, and in this connection it is interesting to note that in the case just reported the pupils first reacted sluggishly to light, and later quite promptly.

The last case was one in which the clinical diagnosis was extremely difficult, owing to the complicated nature of the etiology.

J. B., 50 years of age, bar-tender, showed on admission a dull, complacent, mildly euphoric state, and took little interest in his surroundings. He answered questions promptly, but made many contradictory statements and fabricated somewhat, saying that he had been in the hospital for about six months (two days). He admitted having heard voices calling him names. He was disoriented for time and place, said that the month was August (October), and that the place was Staten Island (Ward's Island). In giving an account of his life he made numerous contradictory and inconsistent statements, and discrepancies occurred in his dates. His power of retention was rather poor, and in carrying out simple calculations several mistakes were made. He denied that his mind was in any way disordered, did not admit feeling confused, and said that his memory was good.

Physically his sense of smell was defective on both sides; the pupils were unequal, irregular, reacted to light and on accommodation, but the range of movement was rather limited; the left side of the face was slightly flattened, but no difference could be made out on movement; no speech defect even over difficult test words; writing showed omission and transposition of letters and some distortion of difficult words. There was general muscular wasting of the arms and legs; hand grips were weak; extensor power of the feet was diminished, especially on the left side; the gait was unsteady, and he tended to drag his feet while walking; there was slight sign of Romberg; tenderness was elicited on deep pressure of the leg muscles; the left knee jerk was diminished; the right was about normal; lumbar puncture showed a marked pleocytosis.

During his hospital residence he continued to maintain the same dull, drowsy, complacent attitude, and died twenty days after admission.

From the history it was learned that he had had syphilis at a date which could not be definitely specified, and that he had been excessively alcoholic. Two years previous to admission he was hit on the left side of the head with a sledge-hammer and was rendered unconscious for a short, unknown period of time. Immediately after this a change was noticed in his disposition; he became forgetful, complained of severe headaches, became indifferent, and lost interest in things. Three months previous to admission he had a transitory diplopia, was noticed to drag his feet in walking, got very confused, said that he wasn't at home, imagined he was fishing, acted at times as though he was picking insects off his wife.

The various etiological factors—syphilis, alcohol, trauma—each seemed to have played a part in the development of the psychosis, so that a definite diagnosis was extremely difficult. The polyneuritic signs were prominent, and in conjunction with the mental picture of confusion, disorientation, and confabulations, it was thought that the case was at least in part Korsakoff's type of alcoholic psychosis. From the fact that his pupils reacted with rather limited extension to light, that his writing was very defective, and that he had a marked pleocytosis of the cerebro-spinal fluid, the picture was thought to be complicated by a syphilitic or parasyphilitic affection of the nervous system with the trauma acting as the precipitating factor.

The autopsy showed a well-marked syphilitic meningitis and endarteritis (Heubner's type).

This case, like the last one, again emphasises the dangers of using the mental symptoms in these cases as aids to diagnosis. Here we had a patient who, while denying any feeling of mental confusion, but while disoriented, made inconsistent statements, showed numerous discrepancies in giving an account of his personal data, and had at the same time a well-marked feeling of well-being.

The points to be emphasised in this case were, the history of diplopia preceding admission, and the fact that his speech, even when tested over difficult words, was intact. In probably the majority of cases of cerebral syphilis the speech is intact, and therefore it is an extremely valuable sign in differentiating between the two diseases under consideration. When a speech disorder does occur—for instance, in cases associated with a hemi-

plegia—it is of the nature of a dysarthria, rather indistinct, washed out, frequently monotonous, but quite unlike the sticking, slurring, distorted speech of the general paralytic. The writing is also a valuable diagnostic sign, but it is not so valuable as the speech, as it depends to a large extent on the education, or lack of education, of the individual. Although it is usually helpful, in this case it was distinctly misleading, because it showed defects similar to those seen in general paralysis. As a general rule, however, one may say that the writing, like the speech, is usually intact, and rarely shows any of the gross defects seen in cases of general paralysis.

In conclusion I would state that :

1. The practical importance of a correct diagnosis between cases of cerebral syphilis and general paralysis is obvious.

2. There is no pathognomonic sign, and it is therefore all the more important to recognise the comparative value of the various symptoms ; interval from infection only helps when near the original infection ; the type of onset is important, for cerebral syphilis has usually a much more acute onset with headaches, dizziness, and paralysis of cranial nerves, but one must be careful, because an insidious onset like that of general paralysis occurs ; where the mental condition is one of considerable confusion it can be used for differential purposes only with the greatest caution ; euphoria and grandiose ideas are more frequent in cerebral syphilis than is usually admitted.

3. As to the physical signs, the pupillary signs are extremely important ; Argyll Robertson pupils are extremely rare in cerebral syphilis ; internal ophthalmoplegia is very rare in general paralysis ; the distorted speech of general paralysis rarely occurs in cerebral syphilis ; the writing defects in the two conditions may resemble each other, but in cerebral syphilis there is, as a rule, less tremor and no distortion.

4. The Wassermann reaction must be considered in relation to the whole clinical picture in each individual case ; it may frequently help to eliminate general paralysis.

REFERENCES.

1. Oppenheim. "Textbook of Nervous Diseases" (translated by Alex. Bruce), 1911.
2. M. Nonne. "Syphilis und Nervensystem," 1909.
3. Mott. "Archives of Neurology and Psychiatry," Vol. i.

4. Patrick. "The Points of Distinction between Cerebral Syphilis and General Paralysis," *N.Y. Med. Journ.*, 1898.
5. E. Siemerling. *Berl. klinisch. Wochenschrift*, 1896, No. 44.
6. J. Michell Clarke. "The Argyll Robertson Sign in Cerebral and Spinal Syphilis," *Brit. Med. Journ.*, Feb. 11, 1911.
7. Plaut. *Zeitschrift f. d. gesamte Neurologie u. Psychiatrie*, 1910.

Abstracts

ANATOMY.

TOPOGRAPHICAL RELATIONS OF THE BRAIN, THE CEREBRAL (240) MEMBRANES AND VESSELS TO THE TEMPORAL BONE, ETC. (Topographische Beziehungen des Gehirns, der Hirnhäute und Hirngefäße zum Schläfenbeine und zum Gehörapparat bei Neugeborenen und Erwachsenen.) WALJASCHKO, *Arch. f. Anat. und Phys.*, H. 3-4, 1910, S. 89.

THIS research had the special object, amongst others, of determining the probable path pursued by the pathological processes arising in the middle ear which result in abscesses of the brain.

The heads used were one new-born male head and one new-born female, four adult male and two adult female heads, representing all the types—dolichocephalic and subdolichocephalic, mesaticephalic and submesaticephalic, brachycephalic and subbrachycephalic.

The whole head was placed in a 20-25 percent. solution of formalin for two days. Then the skull cap was removed, and the preparation left in the same solution for one or two days more. The now hardened brain was removed, cerebrum and cerebellum separately, and coated with a gelatinous material, by means of which coloured impressions of definite districts of the brain could be transferred to the surface of the skull bones. Confirmation was obtained by laying cement on the convolutions in the form of a thread, which adhered to the bones when the brain was applied to the skull.

The relations of the various points and parts of the temporal bone and corresponding parts of the brain to one another are described.

E. B. JAMIESON.

ON A LIGAMENT ACTING AS A CHECK TO THE ACTION OF (241) THE LEVATOR PALPEBRÆ SUPERIORIS MUSCLE.

WHITNAL, *Journ. Anat. and Physiol.*, Jan. 1911, p. 131.

THE structure described is a thickening of the upper layer of the sheath of the levator palpebræ superioris in the form of a trans-

verse band of fibres lying across the muscle just before it begins to expand into its aponeurosis. Internally it is attached to the pulley of the superior oblique and the adjacent bone, and externally mainly to the capsule of the lachrymal gland.

When the muscle contracts these lateral attachments become tense and tend to limit the movement, and as the lid rises its upper part comes in contact with and is resisted by the now tight horizontal band.

H. M. TRAQUAIR.

PHYSIOLOGY.

CENTRAL NERVOUS RESPONSE TO PERIPHERAL NERVOUS

(242) **DISTORTION.** W. A. OSBORNE and BASIL KILVINGTON, *Brain*, Jan. 1911, p. 288.

THE popliteal nerves were cut and sutured so that the central internal was attached to the distal external, and *vice versa*. After about a year the spinal cord was transected in the dorsal region, and the reflexes examined after the primary shock had passed off. The conclusion drawn from the experiments is that the spinal cord is capable of an educative process if sufficient time be allowed for the new paths to traverse and outbid the old. The "grooving" which directs reflexiferous impulses, though certainly inborn, is intensified during the life of the animal, and in young animals is not so deep as to be incapable of giving place to new channels.

J. H. HARVEY PIRIE.

ON TESTING THE SENSIBILITY OF THE NASAL MUCOUS

(243) **MEMBRANE.** (Zur Sensibilitätsprüfung der Nasenschleimhaut.) GUSTAV KILLIAN, *D. med. Wchnschr.*, No. 9, 1911, S. 410.

KILLIAN has devised a small instrument, to which he has given the name Knizometer ($\kappaνίξις$ = tickle), to test the sensibility of the nasal mucous membrane. It consists of a fine hollow tube, shaped like a nasal probe, which is attached behind to a small box containing a reel of thread. The thread is pulled through the tube, and the sensibility is tested by touching various areas of the nose with the thread. The thread is always made to project 6 mm. from the end of the tube, and is renewed frequently, as the thread must be quite dry. Killian believes the instrument gives accurate results.

W. G. PORTER.

- A SYSTEMATIC EXPLORATION OF A NORMAL KNEE JERK:**
 (244) **ITS TECHNIQUE, THE FORM OF THE MUSCLE CONTRACTION, ITS AMPLITUDE, ITS LATENT TIME AND ITS THEORY.** RAYMOND DODGE, *Ztschr. f. allgem. Physiol.*, Bd. 12, 1911, pp. 1-58.

THIS purely physiological communication contains a detailed account of the technique of experiments on the patellar reflex, illustrated by a large number of graphic records. Of the various modes of recording the reaction the author gives the preference to direct registration of the thickening of the quadriceps muscle. Each curve obtained in this way shows two elevations, of which the first is purely mechanical, while the second alone records the reaction. This second curve is always higher than the first, has a more extended plateau and shows a more gradual relaxation. These important observations are completely masked in any record obtained from the swing of the leg.

The amplitude of the kick is dependent on the force of the tap applied to the tendon. On the whole, stimulus and reaction are related according to the Weber-Fechner law. This is not so clearly shown, however, in records obtained from the swing of the leg.

The duration of the latent period depends on the mode of registration. Records from the thickening of the quadriceps give the least and the most regular values.

In a series of comparative investigations the author shows that the patellar phenomenon is more closely related to ordinary reflexes than to ideo-muscular contractions or contractions following upon direct electrical excitation. The reflex time is almost identical with that of the lid reflex. To judge by latent period, the form of the curve, the innervation arrangements and the phenomena of summation, the human patellar phenomenon is undoubtedly a true reflex.

JOHN TAIT.

PSYCHOLOGY.

- EXPERIMENTAL STUDY ON VOLUNTARY CHOICE.** (Étude
 (245) **expérimentale sur le choix volontaire et ses antécédents immédiats.**) A. MICHOTTE and E. PRÜM, *Arch. de Psychol.*, Dec. 1910. 6 fr. 75.

WHEN the value of experiment began to be clearly realised in the sphere of psychology, the aim of workers was to obtain objective results capable of measurement. Introspection was openly decried; instruments were invented, and careful records kept of definite reactions. It was soon found, however, that there was a capriciousness in the results which could be attributed only to the disregarded mental factor. For example, variations in reaction time seemed to be correlated with variations in the direction of atten-

tion. In short, introspection was indispensable—as should indeed have been obvious from the first.

Part of our mental furniture, namely, sensations and images, lends itself with comparative ease to introspective description. Sensations, we have reason to believe, are, broadly speaking, alike in different individuals; they are, moreover, easily correlated with objective phenomena, such as the properties of space, colour, light and sound, hence comparison of sensational experience can be made with some facility; in this region, too, experiments are possible, because we can produce and vary the stimuli. Images are founded on sensation, and a similar nomenclature can be applied to them. Hence the energy of the younger school of psychologists was turned in this direction; obscure sensations, such as the kinæsthetic, were dragged into prominence; and we find such topics as the James-Lange theory of the emotions—which regards our emotional life as capable of analysis into a complex of sensations—hotly debated. The most popular working hypothesis at this time was that sensations were the ultimate elements of mind; they correspond to the atoms of the physical world, and by their interconnection and mutual modification there results the mind as a whole.

The opposition, however, which has a permanent place in science as well as in government, was ready with the criticism that even the most elementary sensation has what is called an affective tone; it pleases or displeases us, and this tone cannot be further analysed. Hence feeling came to be admitted as a fundamental element in the mental complex.

The value of introspection as a method being proved by its work in the sphere of ideation, the question arose, could it go further and make known to us what is going on in our minds when we are thinking? One school maintained that here also analysis brings to light images even in the most unexpected places; thoughts of relation, feelings of “but” and “if” are founded on fleeting and imperfect images, and therefore on sensational elements. Manifestly also verbal images, whether visual, auditory, or motor, play a very important part. Another school asserted that meaning is not exhausted by these images; indeed, that thought may go on without their aid. As far back as 1896 Stout affirmed explicitly that “there is no absurdity in supposing a mode of presentational consciousness which is not composed of visual, auditory, tactual, and other experiences derived from and in some degree resembling in quality the sensations of the special senses; and there is no absurdity in supposing such modes of consciousness to possess a representative value or significance for thought.” That is, he affirmed the possibility of “imageless thought.”

This is the question that has of recent years been taken up by the experimental school, who in this region have had to a large

extent to abandon instruments and make use of systematic introspection applied to purposely induced mental processes. Marbe in 1901 led off with an experimental study of judgment; in 1905 Ach undertook a similar investigation of volition; and many workers are now attacking the problems of the higher forms of mental activity on similar lines. The method is to select a means which will produce in a simple form the process to be investigated; after its occurrence the subject goes over it in memory and describes it as fully as he can. The accounts are taken down verbally, and afterwards carefully compared.

The December number of the *Archives de Psychologie* is entirely devoted to an investigation in this line of research. Voluntary choice is the process selected for examination. The method was to present a card with two groups of figures on it to the subjects, and ask them to choose between two arithmetical operations to be performed with them—between multiplication and division in some cases, and between addition and subtraction in others. The choice once made, the mental process was carefully reviewed, the observer being alone all this time. When he had thus made his experience clear to himself, he pressed a button, and the experimenter appeared and took down the description. The processes involved are carefully distinguished. The volume is divided into two parts, headed Qualitative Results and Quantitative Results respectively. In the former, chapters are assigned to the Perception of the Excitant, the Consideration of the Motives, and other topics concerned with content; in the latter to Different Types of the Consideration of the Motives, Different Forms of Choice, and so on.

Many of the introspective accounts are quoted to justify and illustrate the conclusions drawn. It is, of course, only to be expected that these should not at all times be clear. Any one who has tried the introspection of such processes will know the difficulty of describing them. We find such phrases as "Then came the thought that it was difficult," "Doubt, hesitation," "I tried multiplication, then observed . . ." One desires to know in what form the thought came; did verbal or any other imagery accompany it? could the state of doubt be analysed no further? how was the multiplication tried? Still, these are occasional lacunæ which by no means affect the value of the total result. Six subjects took part in the experiments, and more than six hundred descriptions were recorded. The authors refer apologetically to the "relatively restricted" mass of material, and account for it by the great care and exactitude demanded by the verbal accounts, which made it possible to perform on an average only three experiments per hour. One feels that far from requiring apology the material collected reflects the greatest credit on the perseverance and insight of all concerned.

The conclusions which seem applicable beyond the sphere of the experiment are briefly stated in two or three pages at the end, and in a supplementary chapter M. Michotte makes an important contribution to the general psychology of voluntary choice.

MARGARET DRUMMOND.

**ON THE MECHANISM OF MENTAL PROCESSES, WITH SPECIAL
(246) REFERENCE TO EMOTIONAL CONTROL.** GEORGE R.
JEFFREY, *Journ. of Ment. Sc.*, Jan. 1911.

THIS paper deals briefly with normal and abnormal emotional states, and points out that in those who possess the emotional diathesis there is a badly regulated response to emotion.

Reference is made to M'Dougall's theory of fatigue; how the physiological process of fatigue is a protective mechanism, and by which the psychic centres and their associated areas can be temporarily rested. In the working of the normal brain the resistance is gradually heightened and a "feeling of fatigue" is induced. Whereas the well-balanced brain can indulge in prolonged spells of over-work, the emotional brain tends to pass into a chronic state of strain; chronic fatigue is induced, and want of rest continuing over lengthy periods so elevates the resistance along the association tracts, that normal stimuli produce no reaction,—there is induced a state of psychic paresis. It is conceivable also that when the resistance between the primitive and the normal secondary areas is inhibitive, the stimulus may overflow from the primitive perceptive centres along remotely connected associated areas, and thus produce certain forms of perverted responses, such as are seen in the "paranoid" forms of insanity. The ideal brain does not depend upon its size or its number of nerve cells, but upon a thorough co-ordination of its parts, by a well-ordered system of associated fibres.

AUTHOR'S ABSTRACT.

PATHOLOGY.

**THE SIGNIFICANCE OF THE SO-CALLED MARCHI-REACTION
(247) OF THE MEDULLATED SHEATH IN INVESTIGATIONS
ON THE OPTIC NERVE.** (Die Bedeutung der sog. Marchi-
Reaktion der Markscheiden. Nach Untersuchungen am
Sehnerven.) SCHREIBER, *Zeit. f. die ges. Neurologie und
Psychiatrie*, Bd. 4, H. 3, 1911, p. 386.

THIS so-called Marchi reaction of the medullated sheath bears the same relation to the true Marchi degeneration that chromatolysis of the ganglion cell bears to the degenerated cell with loss of

nucleus. In both the earlier conditions a return to the normal is postulated, whilst in the later conditions the total destruction of nerve fibre and nerve cell respectively follows.

The author has studied this change in the optic nerves in nine cases where enucleation was necessary, chiefly for perforating injuries of the eyeball and where there were present, at the time of injury, certain defects in vision of a temporary nature. He found that the Marchi reaction had a definite relation to the pathological condition of the retina. If the retina, especially the ganglion cell layer, were little altered, the early Marchi reaction was constant, but if the retinal changes were considerable, then the true degenerative Marchi reaction was present. So far the author has been unable to find confirmation of his observations from experimental lesions on the optic nerves and ciliary vessels, but in chronic arsenical poisoning in dogs and cats Lucien and Béco found a greyish-black staining of the medullated sheath of the optic nerve fibres.

This early Marchi reaction is characterised by a diffuse greyish-black staining of the nerve fibre which, on longitudinal section, retains its normal configuration with occasional varicose swellings. Spielmayer, in an article on the fallacies in the interpretation of Marchi staining, states that varicose swelling and dark staining of the medullated sheath are artefacts due to the preliminary treatment of the tissue with formol-Müller or formalin. Against such an interpretation of his findings the author advances the following facts: that his experimental material—fixed partly in pure Müller's fluid and partly in formol-Müller—all gave a negative Marchi reaction; that optic nerves from the above cases of enucleation gave a constant result independent of the fixative; and that the histological changes in the retina bore a definite relation to the type of the reaction.

The author concludes that this early reaction in the optic nerve fibres is the expression of a vital change in the myelin sheath, and that it has a biological significance analogous to chromatolysis in the ganglion cells. JAMES W. DAWSON.

CLINICAL NEUROLOGY.

THE RELATION OF AFFECTIONS OF THE BLOOD VESSELS (248) OF THE RETINA TO THOSE OF THE VESSELS OF THE BRAIN. GEIS, *Klin. Monatsbl. f. Augenheilk.*, Jan. 1911, S. 1.

THIS paper deals with the relation of ophthalmoscopically visible changes in the blood vessels of the retina to the condition of the cerebral blood vessels, as shown by the subsequent histories of the patients, and is mainly directed towards estimating the value of such observations with a view to prognosis.

Two hundred and fifty cases were followed up until death, or for at least five years, and importance is attributed to the fact that the ophthalmoscopic diagnosis was made in every case by the same observer, Prof. Uhthoff, who also stands sponsor for the subsequent investigations.

A large range of retinal vascular lesions is discussed in full detail. The following conclusions are drawn from this research:—

1. Decided signs of arterio-sclerosis indicate a similar condition in the cerebral vessels, and the prognosis is serious as a rule.

2. "Embolism" of the central artery indicates arterio-sclerosis if it occurs in a patient over forty in whom no other cause can be found. The prognosis is serious, but cerebral hæmorrhage may be delayed longer than in (1).

3. In patients under forty and those over forty, who have heart disease, "embolism" of the central artery gives no certain indications.

4. Syphilitic changes are rare, and have not the same prognostic value as arterio-sclerosis.

5. Thrombosis of the central vein is in 40 to 50 per cent. of cases an indication of cerebral arterio-sclerosis, which often only leads to apoplexy after several years. In the remaining 50 per cent. it is a local affection.

6. Sclerosis of choroidal vessels affords no indication as regards the cerebral vessels.

7. Retinal hæmorrhages in arterio-sclerosis, diabetes, and chronic nephritis are usually precursors of cerebral hæmorrhage, more rarely softening, which may be delayed for some years. The prognosis *quoad vitam* need not be unfavourable.

8. The same may be said for retinal hæmorrhages presumed by exclusion to be due to arterio-sclerosis, with the exception of the recurring vitreous and retinal hæmorrhages of young persons.

9. Isolated macular and pre-retinal hæmorrhages have no particular significance.

10. Syphilitic retinal hæmorrhages have no general prognostic value.

11. In retinal hæmorrhage examination of the blood pressure is of great importance.

12. Retinitis albuminurica, excepting that of pregnancy, indicates, as a rule, early death.

13. The prognosis is more favourable in diabetic than in albuminuric retinitis.

14. Vitreous hæmorrhages have no definite prognostic significance.

15. Conjunctival hæmorrhages are only of significance when associated with retinal hæmorrhages.

H. M. TRAQUAIR.

PARALYSIS OF THE TRAPEZIUS AND DISTURBANCES OF
 (249) **SENSIBILITY AFTER ATTEMPTED SUICIDE BY HANG-**
ING. (*Accessoriuslähmung mit Sensibilitätsstörungen nach*
einem Suizidversuch durch Erhängen.) H. KNIERIM, *Neurolog.*
Centralbl., 1911, S. 296.

A GIRL of 19 tried to commit suicide by hanging herself with a thin cord from a door-post. The knot of the cord was behind the left ear, and the main constriction was across the right side of the neck at the level of the thyroid cartilage. From paralysis of the right trapezius the right scapula was displaced downwards and also rotated "en bascule" in the usual fashion but not displaced outwards. The right trapezius showed partial R.D. The sternomastoids on both sides were normal. In addition there was an area of diminished cutaneous sensibility on the right side of the neck from the angle of the jaw down to the acromion process. This area cleared up completely in a fortnight.

Knierim discusses the views of various authorities as to the relative parts played by the spinal accessory nerve and by the cervical nerves in the innervation of the trapezius. The escape of the middle fibres of the trapezius, although the main trunk of the spinal accessory had been severely affected, shows that this part of the muscle is innervated by the cervical plexus. He refers the cutaneous anæsthesia to a lesion of certain of the supra-clavicular branches of the cervical plexus.

PURVES STEWART.

REMARKS ON NEURO-FIBROMATOSIS. (*Fibroma molluscum or*
 (250) *von Recklinghausen's disease.*) W. B. TRIMBLE, *New York Med.*
Journ., 1911, i., p. 358.

A RECORD of six cases illustrated with photographs. Two were in mother and daughter, and in both the lesions appeared at the age of sixteen years. Trimble thinks that such cases are by no means rare, and that there are a good number in New York. Another case, a woman, aged 30, presented circumscribed areas of pigmentation over the back, but no tumours. She had first noticed the condition two years previously, though it might have been present for a much longer time. Trimble suggests that it was the primary stage of fibroma molluscum.

J. D. ROLLESTON.

ACROMEGALY AND RECKLINGHAUSEN'S DISEASE. (*Acro-*
 (251) *mégalie et maladie de Recklinghausen.*) J. NICOLAS and
 M. FAVRE, *Lyon méd.*, 1910, cxiv., p. 786.

A MAN, aged 35, suffering from typical acromegaly, the first symptoms of which had appeared at twenty, presented pigment

spots, molluscous tumours, and a plexiform neuroma in the left groin, which he had first noted three years previously. The viscera, nervous system, and mental state appeared normal. The writers had not been able to find another instance in the literature of the co-existence of acromegaly with von Recklinghausen's disease.

J. D. ROLLESTON.

ARSENICAL ZOSTER AFTER INTRAVENOUS INJECTION OF
(252) **SALVARSAN.** (*Arsenzoster nach intravenöser Salvarsaninjektion.*) L. MEYER, *Med. Klinik*, 1911, No. 3, p. 106.

A MAN with primary syphilis, nine days after an intravenous injection of 0·3 salvarsan, showed an eruption of herpes zoster on the right buttock. Two days previously violent pains had occurred in all the joints, but had subsided before the eruption appeared.

J. D. ROLLESTON.

TABES AND HERPES ZOSTER. (*Tabes dorsal y herpes zoster.*)
(253) E. F. SÁNZ, *Archiv. Españ. de Neurol., Psychiat. y Fisioter.*, 1911, II., p. 37.

A CASE of herpes zoster of the left lumbar region in a man aged 37, suffering from typical tabes. As the eruption was not accompanied by any modification of the tabetic process, such as aggravation of the lightning pains or visceral crises, Sáñez is inclined to regard the association as a mere coincidence.

J. D. ROLLESTON.

CLINICAL AND PATHOLOGICAL STUDY OF A SPECIAL FORM
(254) **OF TABES.** (*Etude anatomo-clinique sur une forme speciale du Tabes.*) DAUWE and D'HOLLANDER, *Nervære*, Vol. ii., F. 1, Dec. 20, 1911.

THE subsidiary title of this paper, "Tabetic amyotrophy with progressive bulbar paralysis," explains the nature of the case described by the authors. The clinical features of the case were briefly as follows:—The patient was a butcher aged 40. There was no definite history of syphilis, but this could not be excluded. First symptoms in 1906, loss of weight, lightning pains, and paræsthesiæ. 1907: Diplopia, 6th N. paresis R., A.R., pupil L. Pallor of optic discs. Then ataxia, loss of K.J.'s and paresis of the legs developed, followed by bulbar symptoms and laryngeal crises. 1908, the condition was as follows:—Mental condition good. There was extreme wasting of skeletal muscles. The ocular condition was

as above. 5th n., m. and s., was affected, 7th n. weakness, 8th n. tinnitus, and some deafness. 9-11: Paralysis of palate, vocal cords, dysphagia, aphonia, and pulse rate 120. 12th: Atrophy and fibrillation of the tongue. The extremities were hypotonic, much wasted, and fibrillary tremor was seen in certain groups of muscles, the arms were ataxic, but movement in the legs was not possible. The feet were in the position of equino-varus. The deep reflexes were absent, and there was the characteristic loss of sensation. The patient had frequent cardiac attacks, in one of which he died. *Pathological examination.*—Spinal cord. There was chronic thickening of the meninges, but this was not of a specific nature, thickened vessels, no perivascular cell infiltration. The thickening involved the adventitial coat especially.

Wasting of both anterior and posterior roots, typical tabetic degeneration in posterior columns. There was also degeneration in the lateral columns, especially in the antero-lateral. Intense degeneration of the cells of the grey matter, every gradation from chromatolysis to cell-destruction and disappearance being met with. The medulla showed the same cell changes, with degeneration in the f. solitarius, spinal root of 5th, and descending root of 8th. There was in addition diffuse degeneration in the fibres of the formatio reticularis in the medulla. The cerebellum showed the same vascular changes as the cord, and there were here, as well as in the medulla, numerous small hæmorrhages and foci of necrosis. The intramedullary vessels were very much engorged with blood. No report is made of the condition of the pyramidal tracts, nor of the peripheral nerves, which were not examined. The brain was not examined. The authors refer to the two views which have been held as to the nature of the amyotrophy in tabes, and quote cases in which the lesion was a peripheral neuritis, and others in which the findings, as in their case, pointed to a central degeneration. They regard the changes in the posterior columns and in the anterior horn cells, etc., as having a common cause, viz., syphilis, and think that it is possible to distinguish clinically between the peripheral and central types. In the latter the following points are characteristic:—asymmetry of the muscular wasting, fibrillation in the muscles, rapid progress of the wasting, and absence of R.D. in the affected muscles. A considerable reference to the literature of the subject is given.

C. M. HINDS HOWELL.

ABORTIVE CASES OF POLIOMYELITIS. J. F. ANDERSON and (255) W. H. FROST, *Journ. Amer. Med. Assoc.*, March 4, 1911, p. 663.

THE occurrence of abortive cases of poliomyelitis has been accepted clinically for some time. The writers establish the

correctness of this view by demonstrating the presence of specific immune bodies in their blood serum. In six out of nine suspected abortive cases, the same germicidal action against the virus of the disease was found in their blood sera as in the serum from a definite case of the disease with extensive paralysis. They also in the same way confirmed the clinical diagnosis of a type of poliomyelitis with spastic paralysis. J. H. HARVEY PIRIE.

ETIOLOGY OF POLIOMYELITIS. A. E. VIPOND, *Brit. Med. Journ.*, (256) March 18, 1911, p. 612.

THE writer, having had under observation a large number of cases in Montreal, where the disease assumed an epidemic form in 1909, has been struck by the similarity between poliomyelitis and typhoid fever, enumerating the following points:—(1) Occurs in late summer and autumn; (2) dies out in cold weather; (3) diarrhœa a common symptom in both diseases; (4) incubation periods practically the same—thirteen days experimentally (Flexner), ten days clinically (Holt); (5) both diseases prevalent in large cities and small towns at the same time where and when the cause of the typhoid is traceable to the water and milk supply. Although evidently well aware of the work of Landsteiner and Popper, Flexner and Lewis, Levaditi and others, these observations made the author think that the micro-organism of poliomyelitis might be of the same character as the typhoid bacillus. He therefore tested sixteen cases for the Widal reaction. Six cases gave a positive result; other four were highly suggestive. Of the remaining six, three were from individuals in good health, to prove that the Widal reaction was not a family peculiarity. Of the three negative cases, two were in very mild cases some two and a half and three months after the attack. On this rather slender ground the author makes the sweeping statement that “having found the Widal reaction present as in typhoid fever, it proves conclusively that the disease is from the same source and cause, and that the germ of the one is allied to that of the other.”

J. H. HARVEY PIRIE.

THE NEW VIEWS ON INFANTILE PARALYSIS FROM AN
(257) **ELECTRICAL STANDPOINT.** (*Les aperçus nouveaux sur la paralysie infantile envisagés au point de vue électrique.*)
MM. DELHERM et LAQUERRIÈRE, *Gaz. des Hôp.*, No. 3, 1911
p. 33.

THE authors have observed some abnormal forms of poliomyelitis, where the electrical reactions are more like those of a neuritis,

being clinically very like those of a diphtheritic paralysis. These forms have a very much better prognosis than the classic variety.

J. H. HARVEY PIRIE.

ARE POLIOMYELITIS AND HERPES ZOSTER THE SAME DISEASE? R. P. GARROW, *Brit. Med. Journ.*, March 18, 1911, p. 621.

IN a short note the writer refers to the known similarities between these two conditions, and records the interesting fact that at Maryport, Cumberland, where acute poliomyelitis was epidemic in August and September 1910, they were also having an unusual number of cases of herpes zoster, ten cases having been noted, whereas one would have been about the average number to have in that time. Herpes zoster was, in fact, also epidemic. The writer suggests that these two conditions may be one and the same pathological entity.

J. H. HARVEY PIRIE.

REPORT OF A CASE OF EPIDEMIC ANTERIOR POLIOMYELITIS. (259) L. F. FRISSELL, *Journ. Amer. Med. Assoc.*, Mar. 4, 1911, p. 661.

THIS case is interesting inasmuch as, the disease being suspected, the diagnosis was established by means of lumbar puncture twenty-four hours before the onset of paralysis. The fluid at this stage contained excess of lymphocytes and of protein.

J. H. HARVEY PIRIE.

AN EPIDEMIC OF INFANTILE PARALYSIS IN BRISTOL. (260) GEORGE PARKER, *Brit. Med. Journ.*, March 18, 1911.

VERY few outbreaks of the epidemic form of this disease have been recorded in Great Britain, though they have been numerous during the last ten years both on the Continent and in the United States. In 1908, indeed, W. W. Treves met with a group of 8 cases, and in 1910 another group of 13 or more were found by Garrow near Maryport.

In Bristol, from June 1909 to the end of January 1910, 37 cases were met with, the great majority during the summer months (32 by the end of October), but a few continued to appear till past midwinter. The age of the patients varied from 4 months to 16½ years, and, omitting adolescents, the average was just 2 years. There were 24 males and 13 females. No abortive cases without paralysis were included, and it is possible some cerebral and other irregular cases escaped notice, as attention was not directed to poliomyelitis at the time.

Two patients died, *i.e.* a mortality of nearly 6 per cent. Most of the cases showed a febrile stage. In about a quarter there were "rheumatic" pains, and in two cases retraction of the head was noticed. Facial paralysis occurred in one case, tonsillitis in two, and in three there were "symptoms of measles." Pulmonary troubles occurred in several children. In one child a rigidly flexed knee was an early symptom. Seven were paralysed with little or no warning while in perfect health. Nothing was discovered as to the mode by which the disease was conveyed from patient to patient. Thirty-four children were living in urban districts, but rarely was any contact traced.

In one family of eight children, indeed, a boy was severely attacked, and the next day a sister (who had previously been suffering from some bronchial trouble) was also struck down by paralysis. In view of the long duration of infection which some writers claim, it may be noted that two cases who lived a few doors apart were attacked, one in July and one in November. Two others, likewise living close together, were attacked in September and December.

Numerous cases of herpes zoster were noticed in the city at the time. Though sporadic cases of infantile paralysis were frequently observed in the district, thirty-seven cases in seven months may well be regarded as an epidemic outbreak.

AUTHOR'S ABSTRACT.

ON THE AUTHENTICITY OF RECENT EPIDEMICS OF INFAN-

(261) **TILE PARALYSIS.** (*De l'authenticité des épidémies récentes de paralysie infantile.*) MM. E. et E. GAUJOUX, *Gaz. des Hôp.*, 1911, No. 5, p. 61, and No. 8, p. 109.

As there appears to be some doubt as to the real character of at least some of the earlier epidemics recorded as infantile paralysis (poliomyelitis), there being confusion with epidemic cerebro-spinal meningitis, the authors have thought it well to subject the records to a critical survey in the light of recent knowledge. They discuss first of all the epidemiology, then symptomatology and pathological anatomy, and lastly the etiology. Their conclusions are that although the various facts recorded in recent epidemics of infantile paralysis do not fall within a homogeneous group, and although some observations have probably been too hastily labelled as "poliomyelitis," yet the variations in symptoms and anatomical lesions are not sufficient to negative the genuine character of poliomyelitis epidemica, an infectious disease due to the same cause as the sporadic form, the pathogenic agent being more or less diffusible and more or less virulent as the case may be.

J. H. HARVEY PIRIE.

TRANSMISSION EXPERIMENTS WITH THE VIRUS OF POLIO-**(262) MYELITIS.** R. B. OSGOOD and W. P. LUCAS, *Journ. Amer. Med.**Assoc.*, Feb. 18, 1911, p. 495.

THE authors have produced typical poliomyelitis in monkeys by the inoculation of a filtrate of the nasopharyngeal mucosa of two monkeys dying, without other discoverable infections, six weeks and five and a half months respectively after the acute stage of the disease. They were unable to transmit the disease by inoculation of the cord from the same monkeys. The virus of the disease may therefore persist in an infective condition in the nasal mucosa of monkeys for some considerable time after the acute manifestations. If the same occurs in human beings, some facts in the epidemiology of the disease may be accounted for, and efforts for the control of the disease must take such carriers into consideration.

J. H. HARVEY PIRIE.

EXPERIMENTAL POLIOMYELITIS IN MONKEYS. NINTH NOTE.**(263) S. FLEXNER and P. F. CLARK,** *Journ. Amer. Med. Assoc.*, Feb. 25,

1911, p. 585.

THE chief feature in this note is in regard to the use of hexamethylenamin (urotropin) in the treatment of the disease. They find that if this drug be given so that it is present in the spinal fluid of a monkey, and its administration be continued by the mouth, injection of the virus intra-cerebrally resulted, in some of the animals but not in all, first, in a prolongation of the period of incubation from six or eight to twenty-four days; and secondly, in the prevention of paralysis. It must be noted that the successful results reported are in inhibiting infection, not in restraining an already established infection.

J. H. HARVEY PIRIE.

ARTIFICIAL MUSCLES IN THE EARLY TREATMENT OF**(264) INFANTILE PARALYSIS. A NEW METHOD.** R. O.MEISENBACH, *Med. Record*, March. 11, 1911, p. 435.

THE author believes in the early use of orthopædic measures, and has devised artificial rubber muscles. For these an ordinary rubber dam is used, cut into strips 2-4 cm. wide and from 12 to 24 cm. long. At each end pieces of adhesive plaster are attached, and by these the rubber is fastened in positions corresponding to the origin and insertion of the muscle whose place it is to take. It is applied fairly taut, but not over so, if the limb is held in a corrected position at the time of application. By the use of these "rubber muscles" the lost power is supplied temporarily until the paralysed

muscles have recovered ; contractures may be prevented, a local active stimulation is produced, the joint is not immobilized, nor are other measures, such as massage, electricity, etc., interfered with.

J. H. HARVEY PIRIE.

SPINAL TUMOURS IN ROENTGENOGRAMS. (Ueber Wirbel-
(265) *geschwülste im Röntgenbilde.*) FRAENKEL, *Fortschr. a. b. Geb. d. Röntgenstr.*, Feb. 2, 1911, S. 245.

IN this well-illustrated paper, from the Pathological Institute of the General Hospital of Eppendorf, Fraenkel aims at showing X-ray examination of the vertebral column to prove the presence of tumours of the vertebræ can supply not only very interesting information, but also at times very important indications for treatment. He points out that ten years ago he emphasised the frequency of vertebral cancer by post-mortem and X-ray examination. Röntgenograms show disease even of a single vertebra, which may escape observation in the case of a sawn-through pathological specimen. Excluding rare conditions, viz., gumma and hydatid, the bulk of the tumours met with are malignant, especially carcinomata, and these neoplasms are to be taken as metastases of a primary cancer attached to some organ. In all cancer cases interference with the normal appearance of the vertebræ or vertebral column is significant. No definite conclusions can be drawn from the skiagrams as to the histological nature of the tumour excepting extensive new bone formation in mammary carcinoma or prostatic cancer. Minute descriptions of the various types met with are given, the appearances in carcinoma, sarcoma, myloid and spindle-celled sarcoma and a few mixed tumours.

In certain respects the technique still requires improvement, specially in cases of osteoplastic carcinoma, because of the great pain associated with it.

WM. HOPE FOWLER.

THE CEREBRO-SPINAL FLUID IN ACUTE ANTERIOR POLIO-
(266) **MYELITIS.** W. H. HOUGH and G. R. LAFORA, *N.Y. Med. Journ.*, Nov. 5, 1910.

A PRELIMINARY note of the findings in eleven cases. The following methods were employed :—

For the globulin contents the Noguchi butyric acid method ; the Fuchs-Rosenthal method for quantitative cell estimation, and the Alzheimer method for cell differentiation.

In all of the cases the spinal fluid was perfectly clear, the pressure was slightly increased in most of the cases, the protein

content was increased and there was a moderate pleocytosis. In those cases examined during the first stages of the disease there was observed the highest proportion of polymorphonuclear leucocytes. The polymorphonuclear leucocytes disappeared after the fifth or sixth day of the disease. In the early cases a number of altered red blood cells were seen. Later in the disease lymphocytes, plasma cells, Körnchenzellen, macrophages, and occasionally mast cells were seen.

No stained bacteria of any kind were seen in any of the preparations.
D. K. HENDERSON.

BACILLUS TYPHOSUS IN THE CEREBRO-SPINAL FLUID.

(267) (*Typhusbazillen in der Zerebrospinalflüssigkeit.*) STUHMER,
Münch. med. Wchnschr., No. 7, 1911, S. 357.

A PATIENT was admitted to hospital in a very restless condition; Widal positive only up to 1.50. After four days he developed meningeal symptoms, and microscopic preparations made from the sediment after centrifuging the cerebro-spinal fluid showed a few bacilli which were judged to be *Bacillus typhosus*. The patient recovered, but during the whole course of the illness typhoid bacilli were never found in the stools, the spleen was not enlarged, and there was no typical tongue or rash. The author believes the case to be one of true meningitis typhosa; in this form of meningitis the prognosis is better than in some of the other forms. Apparently no cultural investigations were made of the cerebro-spinal fluid.

F. ESMOND REYNOLDS.

SUDDEN DEATH FOLLOWING SPINAL PUNCTURE FOR

(268) **DIAGNOSIS.** E. M. COLIE, *Med. Rec.*, 1911, i., p. 487.

A MALE child, aged 18 months, who had had diarrhoea for three months, developed symptoms suggestive of tubercular meningitis. Five minutes after removal of 10 c.c. of clear cerebro-spinal fluid death took place from asphyxia. At the necropsy an abscess was found in the left frontal lobe, which had burst either during life or during the manipulations required for its removal. Death is attributed to foraminal hernia, the intracranial pressure being no longer counterbalanced by the intraspinal. J. D. ROLLESTON.

BIOCHEMICAL EXAMINATION OF THE CEREBRO-SPINAL

(269) **FLUID IN CASES OF MENTAL DISEASE.** HUGH MORTON
Journ. Ment. Sc., Jan. 1911.

For this essay the Bronze Medal of the Medico-Psychological Association, 1910, was awarded.

The investigation included:—an examination of the cerebro-spinal fluids for the syphilitic reaction (Wassermann reaction); an examination for the presence of substances which exercise an activating or inhibitory effect on the hæmolytic properties of cobra venom; the relative amount of globulin and substances precipitated by alcohol in cerebro-spinal fluids from various sources; and the relation of the quantities of these substances to the presence of the Wassermann reaction, and to the presence of substances influencing the hæmolytic action of cobra venom.

A positive Wassermann reaction was obtained in twenty-eight out of thirty cases of general paralysis—thirty cases of epilepsy and dementia præcox giving a negative reaction. Speaking generally, the more advanced the case the greater the amount of complement absorbed. Fresh cerebro-spinal fluid was found to possess no activating properties for cobra venom. Mixtures of cerebro-spinal fluid and alcohol gave varying degrees of turbidity, the greatest in cases of general paralysis, but there was no relationship between the degree of turbidity and the amount of complement absorbed in the Wassermann reaction. An alcoholic extract of cerebro-spinal fluid when heated and filtered contained substances which produce lysis of ox-corpuscles sensitised with cobra venom, but the strength of this lytic property bore no relation to the density of the precipitate in the mixture of alcohol and spinal fluid, or to the amount of complement deviated by the fluid in a Wassermann test. The author suggests that it is questionable whether or not the Wassermann reaction is due to substances of a lipoid character in the fluid. A few cases of dementia præcox were found with a high protein content, but such cases gave no Wassermann reaction. No relationship was found to exist between the protein content of the spinal fluid and the intensity of the Wassermann reaction.

GEORGE R. JEFFREY.

**MENINGITIS ASSOCIATED WITH A BACTERIUM OF INFLU-
(270) ENZA GROUP.** SAYCE, *Austral. Med. Journ.* Jan., 20, 1911,
p. 25.

THIS paper records seven cases of meningitis in which, by lumbar puncture and by post-mortem examination (five cases), the only organism found was bacillus closely resembling Pfeiffer's typical influenza bacillus, but differing from it in the presence of thread-like forms and in other minor points.

In one doubtful case only was there any history of influenza or exposure to influenzal infection.

Similar cases have been previously reported from Edinburgh by Ritchie and by M'Donald.

HAROLD CROSS.

ACUTE SECONDARY SYPHILITIC MENINGITIS TREATED BY (271) "606." PERSISTENCE OF LYMPHOCYTOSIS AFTER DISAPPEARANCE OF WASSERMANN'S REACTION IN THE BLOOD AND CEREBRO-SPINAL FLUID. (Meningite syphilitique aiguë secondaire traitée par le "606." Persist-ance de la lymphocytose après disparition de la réaction du Wassermann dans le sang et dans le liquide céphalo-rachidien.) J. DU CASTEL and J. PARAF, *Bull. et mém. de la Soc. méd. des Hôp. de Paris*, 1911, xxxi., p. 252.

A RECORD of a case in a woman, aged 31, in whom one subcutaneous and two intravenous injections produced a rapid improvement of the acute symptoms without effecting complete recovery, as the integrity of the reflexes was not re-established nor the lymphocytosis suppressed.

J. D. ROLLESTON.

CASE OF TUMOUR OF THE HYPOPHYSIS CEREBRI. JOHN (272) HAY, *Liverpool Med.-Chir. Journ.*, Jan. 1911, p. 57.

WOMAN, aged 44. Has one child, girl, aged 16, no other family. Her first symptoms were those of neuralgia, and defective vision, bitemporal hemianopsia, August 1908.

March 1st, 1909.—Vision: right eye—Jæger, 20; left eye—hand. Bitemporal hemianopsia present. Pupils react, discs a trifle pale. In February 1909 the neuralgic pain became much more severe, chiefly affecting the left side of the head; its severity was so great that for many nights she was unable to sleep. At no time did she vomit. Never any alteration in her appearance, and the weight has remained fairly steady. The hands, feet, and face are normal. Latterly drowsiness has been marked; she can fall asleep at any time in the twenty-four hours. Sometimes the drowsiness is irresistible.

The pubic hair is scanty. Sexual appetite is unimpaired.

Dr C. T. Holland took a radiogram on November 19, 1910, which demonstrates a widening of the sella turcica.

December 8th, 1910.—She is stone blind in the left eye, which shows marked white atrophy. In the right eye the optic atrophy, though present, is not so pronounced.

Treatment.—Relief was obtained by iodipin. She could not tolerate potassium iodide. Under this treatment the headaches rapidly diminished and her vision improved slightly.

AUTHOR'S ABSTRACT.

THE OCULO-MOTOR TYPE OF POLIO-ENOEPHALITIS. SYDNEY
(273) STEPHENSON, *Proc. Roy. Soc. of Med.* (Disease in Children
Section), March 1911, p. 87.

A PAPER based on notes of twenty-eight cases. There is a particular form of paralytic squint in children due to polio-encephalitis, most commonly met with in infants, and associated but rarely with other symptoms indicative of a cerebral disorder. Zymotic diseases appear to be an important factor in the causation. Any of the extrinsic muscles may be affected, but in three-fourths of the cases the external rectus muscle is alone involved. The intrinsic musculature is seldom attacked.

J. H. HARVEY PIRIE.

INTRACRANIAL SURGICAL LESIONS IN CHILDREN. ROGERS,
(274) *Journ. Amer. Med. Assoc.*, March 4, 1910.

THE author's object in this interesting paper is to urge the importance of early operative intervention in cases which exhibit cranial or intracranial lesions. He reports his experience in sixteen cases in which operation was undertaken. The results from early interference in fracture of the skull were uniformly good, but when focal symptoms had existed for months or years the results obtained were proportionately less satisfactory. In one case, however—an instrumental injury at birth—very marked improvement was observed, notwithstanding a delay of four years. Several cases of mentally deficient children, in whom a family history of syphilis was elicited, were submitted to operation. Capillary arterio-sclerosis was discovered in every case, in one as early as sixteen months. The operation consisted in cerebral decompression and gave encouraging results; every patient apparently improved subsequently on anti-syphilitic treatment. The author holds that until the cerebral pressure is diminished by this means, beneficial effects from the administration of potassium iodide and mercury cannot be obtained. The operation must be performed before ocular and mental disturbances are advanced, and the dura must be opened, as otherwise only a temporary relief is procured. It should be a rule, in such cases, always to employ the Wassermann test. On no occasion when a positive result was obtained in the child did the author fail to get a similar expression in either the father or mother. In tubercular meningitis no benefits were noted after operation. Other cases reported comprised extra-dural abscesses following otitis media, in which excellent results were obtained from drainage. C. B. PAUL.

ASPHYXIAL EPILEPTIC SPASMS. (Beitrag zur Lehre von den
(275) **epileptoiden Erstickungskrämpfen.**) LAQUER, *Neurolog. Centralbl.*, 1911, S. 235.

A MAN aged 64, bolting a piece of meat, suddenly fell unconscious. When seen fifteen minutes later he was cyanosed, foaming at the lips, with the muscles of the trunk and limbs tonically contracted, especially on the left side. The pupils were medium dilated, and did not react to light; the corneal reflex was abolished; the tongue was bitten. Respiratory movements were superficial and very slow; the cardiac sounds were inaudible. Laquer at once extracted the piece of meat from the upper opening of the larynx. Pulse and respiration reappeared. Before recovering consciousness the patient had violent convulsions in the muscles of the trunk and limbs, with alternate emprostotonos and opisthotonos. Then followed pushing movements of the arms and legs, facial distortion, rolling of the eyes, and violent lateral rotation of the head. The pupils remained insensitive. The patient groaned, sighed and gnashed his teeth. This went on for an hour and a half, when the patient began to wake up, but was mentally disoriented. Next morning he was quite normal, and has no recollection of any incident subsequent to the moment when he swallowed the piece of meat.

Laquer refers to various other observations as to epileptiform fits following sudden asphyxia. PURVES STEWART.

TWO CASES OF HYSTERIA, TREATED BY SUGGESTION,
(276) **WITH AN ACCOUNT OF SOME EXPERIMENTS IN HYPNOTISM.** J. E. MIDDLEMISS, *Journ. Ment. Sc.*, Jan. 1911, p. 116.

THIS paper deals with two male hysterics who were patients in Gartloch Mental Hospital, Glasgow, and who were subject to seizures of a convulsive nature. It describes the treatment adopted, which was similar in the two cases, and which consisted chiefly in counter-suggestion. The seizures were practically ignored, and the patients were kept fully occupied. The more acute symptoms soon disappeared, though the hysterical basis remained unaltered, of course. The rest of the paper deals with certain experiments in hypnosis, which were carried out concurrently with the above treatment. Both patients were readily hypnotised, and the more intelligent of the two—J. S.—was able to give a description of his sensations and explain how he carried out the various commands which were given to him. On the

whole, too, he was the more dependable of the two, thus illustrating what is generally held, viz., that the higher the degree of intelligence, the more successful is the hypnosis. At the same time it must be admitted that whilst most of the orders were carried out correctly, there was no absolute certainty as to the result, the failures being probably due to auto-suggestion on the part of the patients. Auto-suggestions which run counter to the will of the operator are, of course, a characteristic feature of hysteria, and constitute the main difficulty in its treatment by hypnosis.

AUTHOR'S ABSTRACT.

THE DIFFERENTIATION OF THE PSYCHO-NEUROSES (HYSTERIA) AND OF NEURASTHENIA. (La différenciation des psycho-névroses (hystérie) et de la neurasthénie.) BERNHEIM, *Journ. de Med.*, No. 8, 1911, p. 161.

IN this short article the author states that he has been uniformly successful in the treatment of hysteria by suggestion, and uniformly unsuccessful in the treatment of neurasthenia and psychasthenia.

Though interesting, this hardly seems to justify the inference that, whereas hysteria may be regarded as due simply to mental representations of an emotional character, the neurasthenias and psychasthenias must be regarded as auto-intoxications.

Still less acceptable is the view that the therapeutic test supplies a criterion for the differentiation of these disorders.

HAROLD CROSS.

NEURASTHENIC CONDITION DUE TO UNRECOGNISED DIPHTHERITIC CORYZA. CURE BY SEROTHERAPY. (État neurasthénique par coryza de nature diphtérique méconnue. Guérison par la sérothérapie.) GAREL and C. LESIEUR, *Lyon m'd.*, 1911, cxvi., p. 431.

A MAN, aged 38, who had suffered from nasal catarrh and slight fever for three months, presented a condition of marked asthenia. He was easily fatigued, his hand-grasp was weak without actual paralysis, and the knee jerks were diminished. Bacteriological examination showed abundant diphtheria bacilli in the nose and throat. Rapid and complete recovery followed subcutaneous injection of antitoxin, combined with the insufflation of dried serum into the nostrils.

J. D. ROLLESTON.

MERALGIA PARESTHETICA DUE TO PRESSURE OF THE
(279) **CORSET.** MILLER, *Arch. Intern. Med.*, Feb. 15, 1911, p. 182.

THE case reported was of two years' standing. Numbness over the area of distribution of the external cutaneous nerve, brought on by standing and relieved by sitting or lying down, had been followed by occasional burning and stabbing pains, and finally by acute paroxysms and extreme hyperæsthesia.

On examination it was found that "the lower edge of the corset hooked over the anterior superior spine, so that when standing erect it was with difficulty that the finger could be introduced between the corset and the thigh."

Removal of this supposed cause of pressure was followed by a speedy cure, and the causative relation was further confirmed by a reappearance of the symptoms when corsets of a similar pattern were worn experimentally.

HAROLD CROSS.

INTERCOSTAL NEURALGIA. (De la Névralgie Intercostale.
(280) *Etude des symptômes accusés par les malades.*) W. JANOWSKI,
L'Œuvre Med. Chir., No. 62, Feb. 1911.

THE author considers that the disease is much commoner than is generally recognised. The reasons for this are: (1) the lack of attention which the patient pays to it in those cases when the pain is not severe and the periods of freedom from pain are prolonged; (2) the frequency with which several intercostal spaces are affected simultaneously; (3) the frequent wrong diagnosis of visceral affections; (4) the fact that the acute exacerbations common to all neuralgias suggest, when localised, pleurisy, renal or biliary colic, or, when diffuse, true or false angina, or perhaps hysterical crises; (5) the association with other diseases.

The most commonly affected spaces are the 6th, 7th, and 8th. The diagnosis of "pleurodynia" should not be accepted. In all possible cases the intercostal spaces should be explored by the finger for tender spots. The pain may be referred to the shoulder joint, the arm, the mamma, the præcordia when there may be associated palpitation, to the epigastrium when nausea and vomiting may be present; cholelithiasis, movable kidney, renal calculus and other acute abdominal conditions may be diagnosed; pain in the back and in the sacrum may often be due to neuralgia of the spinal nerves.

The disease is twice as frequent in women as in men, and most common between twenty and forty: 70 per cent. are on the left side, 17 per cent. on the right side, and 13 per cent. bilateral. The author agrees with Henle's explanation that the greater

frequency on the left side is due to the anatomy of the veins, which lends itself more readily to venous stasis than on the right side.

The only treatment of any avail is blistering over the tender spots. If these are too numerous to be blistered all at once, analgesic drugs should be employed pending the above treatment.

A. L. TAYLOR.

THE INFLUENCE OF DIET IN THE PREVENTION AND IN THE
(281) **CAUSATION OF CONVULSIONS.** (De l'influence du régime alimentaire au point de vue de la prophylaxie et de la genèse des accidents convulsifs.) GOTTSCALK *Arch. de Neurol.*, mars 1911, p. 158.

IN the introduction to this paper the author reminds us that experimental paralyses, apparently cured, may be revived, either as paralysis or as convulsions, by the administration of toxic drugs to the animal. He also recalls the view expressed by Pierret that nervous phenomena, including convulsions, tics, and both transitory and lasting mental defects, are often due to old cicatrices of the nervous centres, the result perhaps of malnutrition in intrauterine life.

On this view, the importance of the dietary as a possible exciting cause of epileptic crises becomes apparent.

The author devotes this first article to a review of some of the régimes advocated in recent times.

On the supposition that epileptic attacks were due to auto-intoxications, or more generally to digestive troubles, various dietaries have been proposed similar to those in use for other dyspeptics, and their adoption has usually been followed by a diminution in the frequency of the crises. The more severe measures of a purely milk diet and of gastric lavage have also met with some success.

Efforts have been made in various directions to obtain more precise knowledge of the effective food factors in the dietaries, and one of these lines of investigation, the elimination of salt from the diet, is here discussed at some length.

Since this elimination is only effective in reducing the number of crises in cases which are being treated by bromide, it must be supposed that the diminution of chloride acts solely by facilitating the action of the bromide.

The most acceptable view of the rationale of this phenomenon, and one confirmed by cryoscopy of the blood and of the urine, is that the reduction of the chloride of sodium increases the portion of bromide which becomes ionised, and which alone is effective.

It is said that when salt is withheld, about four grammes of

bromide per day represents a toxic dose, and it is recommended that this régime should only be imposed on patients under observation. The ill effects of the treatment, observed in a certain proportion only of those treated, are divided into three groups: *firstly*, failure of appetite and malnutrition following a disgust for the diet; *secondly*, symptoms of bromism; and, *thirdly*, specific effects of the dechloridation.

The last two groups include acne, œdema, neuralgia, abolition of reflexes, vertigo, somnolence, amnesia, hesitating speech, mental confusion, excitement, hallucination, delirium.

These effects can be obviated by watching for premonitory signs and allowing a limited quantity of salt.

This régime is said to be especially indicated in renal insufficiency, where the reduction of the dose of bromide is a desideratum owing to its defective elimination, but to be contra-indicated in cardiac affections.

HAROLD CROSS.

CEREBRAL SYMPTOMS IN A CASE OF BROMISM. (Cas de (282) bromisme avec troubles cérébraux.) FELZMANN, *Arch. de Neurol.*, mars 1911, p. 152.

THE cerebral symptoms of bromism may closely simulate general paralysis, for which the case under review was at first mistaken. On admission to hospital the patient showed some failure of memory, sluggish pupils, confused and hesitating speech with slight aphasia, tremor of hands and tongue, and a staggering gait.

He rapidly became stuporose and disorientated, and showed auditory hallucinations with delusions corresponding, but within ten days of admission the whole condition had cleared up.

He had taken about 300 grammes of sodium bromide in a fortnight.

The same combination of symptoms were observed by Séguin of Chicago in 1877, but the recorded cases are very few, and the author suggests that other cases may have been overlooked owing to the symptoms being attributed to the disorders under treatment.

HAROLD CROSS.

SOME OF THE MEDICAL PROBLEMS OF ALCOHOLISM. IRWIN (283) H. NEFF, M.D., *Boston Med. and Surg. Journ.*, Jan. 26, 1911, Vol. clxiv., No. 4, p. 112.

FROM a sociological point of view the problems of drunkenness have received thorough attention. It may be said that some of the view-points lack scientific proof from a medical standpoint, *e.g.* the relation of poverty to drunkenness or the dependence

of alcoholism on heredity. But these omissions have rather strengthened the interest taken in the subject. More light on the medical aspects of the problem is anxiously waited for, and it is felt that without the aid of the medical profession the problem will not be solved. Judges and others interested in the care and cure of inebriates have advised that a public campaign educative in character be inaugurated.

Since "the war against tuberculosis" was commenced, it is interesting to note that there has been a diminution in the number of advertised quack "consumption cures"—an improvement still more evident if we contrast it with the still numerous "cures for drunkenness" to be seen in the public prints.

The medical profession has awakened to the need of concerted action; but to be successful it must proceed along definite lines and be sure of the premises. There are many problems here requiring scientific research. Environment and the individual must both be studied.

The word "pathologic," as applied to inebriety, should be used with caution, and after concise differentiation. Inebriety is a condition of nervous weakness on which is engrafted a habit—a conception which qualifies the assertion that inebriety is a disease.

During the past two years we have studied the personality of our patients before the onset of the alcoholic syndrome, and it would appear that in a considerable percentage of the cases a pathological nervous condition antedated the onset of the inebriety. It would seem as if the word "pathologic" were admissible in this connection, but its use should be restricted to cases where the nervous or psychical conditions developed prior to the syndrome. Recent work in alcoholism and related diseases appears to throw doubt on the concise descriptions found in text-books of the mental and physical stigmata of alcoholism. There are very few diseases which are wholly due to alcohol. The cause and character of delirium tremens, the relation of arterio-sclerosis to alcoholism, the organic physical disease in confirmed cases of alcoholism, the relation of alcoholism to insanity, are among the unsolved problems before the medical profession.

A factor of great clinical value is the general opinion that the inebriate is either irreformable or does not lend himself readily to curative measures. The writer's experience would show that this is an exaggeration of the facts. The most important result of alcoholism is a reduction in vitality and resistance, as shown on the physical side by susceptibility to disease, on the mental side by loss in will power. The personality of the inebriate is individual, and cannot be expressed by a composite description.

There is no drug treatment of any value for alcoholism.

Drugs at their best are of secondary importance. Though it cannot be denied that a small number of inebriates have shown marked improvement after treatment by one of the "cures," the writer believes that improvement resulting from such treatment may be credited to change of environment and the memory of a natural disgust at the use of the drug. Such crude methods of suggestive therapeutics are unscientific and lacking in permanency. At the State Hospital in Massachusetts reliance is placed on the building effects of pure air, food, abstinence from alcohol and drugs, regular hours, and out-of-door work. But for the cure of the pathologic inebriate more is required. The chief methods for the cure of this class lie in arousing the patient's co-operation in his own recovery by educating his will. The inebriate, strengthened in body by out-of-door work, etc., is also trained in mind to resist alcohol, and his constructive interests are aroused.

In the majority of cases the educational or re-educational measures can best be inaugurated at the hospital, but no general rule can be given. Individual treatment alone is of avail.

The most important question of all is the after-care of the patients. After-care associations may do good work in this connection. At the Foxborough State Hospital, in addition to finding work for the patient after his dismissal from hospital, urging total abstinence within his family, linking the patient with the church, sympathetic friends, temperance fraternities, etc., he is visited by the out-patient physician of the hospital. The results have been highly satisfactory.

A. HILL BUCHAN.

ALCOHOLISM AND POSTERITY. (*Alkoholismus und Nachkom-*
(284) *enschaft.*) A. HOLITSCHER, *Prag. Med. Wochenschr.*, xxxvi.
Jahrg., N. 7, Feb. 16, 1911.

THE question whether peoples, like individuals, after reaching their maximum point of culture, must necessarily decline and die out is for us insoluble. Civilized Europe is obsessed by an almost morbid fear of degeneration. In the daily press and in general literature this, one of the most difficult of scientific problems, is freely discussed by the laity. It is questionable whether the supposed signs of degeneracy are sufficiently known and understood to justify conclusions being drawn from them; whether they may not have existed in former periods; whether they may not be transitory, and the regenerative power in the race may not be able to remove them.

There can be no doubt that there is a call to the fostering of race hygiene or "eugenics."

The effect of modern medical and hygienic methods and the

results of charitable efforts in preserving the lives of weaker individuals, who might formerly have perished in infancy or before the procreative period, renders this call the more urgent. The greatest problem before modern science and ethics is to make race hygiene compensate for this stopping of the action of natural selection and exclusion of weaker elements.

All who have directed their attention to this subject recognise the close connection between degeneration and alcoholism. The investigation of the exact causal relationships subsisting between the two is exceedingly complex. One can say that the eliminative process working on the race formerly ascribed to alcoholism is by no means complete. It is uncertain, delayed, and in many cases far from beneficial. It is not always the least useful elements that are removed by it, but frequently elements worthy of preservation, which happen to have a diminished resisting power towards this particular poison. Again, where alcohol does work selectively, the process is too slow, being spread over three or four generations to the injury of the social organism.

Alcohol may be thought of as affecting progeny in various ways:—1. It may act as a germ-cell poison—a possibility, be it remembered, not incompatible with the acceptance of Weissmann's teaching regarding the non-transmission of acquired characters. 2. It may weaken the parental organism generally and so affect the reproductive organs. 3. Again, it may act in an indirect way: drunken habits in parents leading to the neglect of their children, whose environment, food, etc., is poor.

While there may be general agreement regarding the prejudicial result of excessive drinking on progeny, the investigation of the effect of the use of moderate quantities of alcohol is much more difficult.

In his first experiments on animals Laitinen no doubt used such large quantities of alcohol as to vitiate their value from this point of view; but in his later investigations much smaller amounts were administered. The results were certainly remarkable and suggestive. Animals which had been treated with alcohol had a larger progeny, but there were more still-births and lower average individual weight than obtained with animals who had received no alcohol.

Laitinen also endeavoured to study the subject in man, the temperate habits prevalent in Finland offering special advantages for such an investigation. 5845 families were examined. He made three classes: 1. Abstainers or those practically abstainers at least since marriage. 2. Moderate drinkers, in the habit of taking a glass of beer daily. 3. "Excessive" drinkers, including all who are in the habit of taking more than one glass of beer daily—a very broad conception of intemperance.

The number of miscarriages in the case of the abstainers was 1·07 per cent.; of the moderate drinkers, 5·26 per cent.; of the excessive drinkers, 7·11 per cent.

The average weight of children at birth in the case of abstainers was 3600 g.; of moderate drinkers, 3570 g.; of excessive drinkers, 3470 g.; while the average weight of boys at eight months was, in the first class, 9090 g.; in the second, 8910 g.; in the third, 8880 g. The differences were still greater in the case of girls.

The children of abstainers got their first teeth on the average at 4·1 months, of moderate drinkers at 4·9 months, and those of the excessive drinkers at a period beyond that examined, *i.e.* eight months. At the end of eight months 27·5 per cent. of abstainers' children, 33·9 per cent. of those of moderate drinkers, and 42·3 per cent. of the drinkers' children had no teeth.

The average numbers of teeth at the end of eight months in the three classes was respectively 2·5, 2·1, and 1·5.

One objection which might be brought against the validity of Laitinen's conclusions is that the bad results of alcohol might be attributed to the continuance of its use during pregnancy, with direct poisoning of the foetus, rather than to a previous action on germ cells. One should have liked also that all his investigations had been made by medical men and the state of health of the parents determined. V. Bunge's investigations are free from this objection. He specially studied nursing capacity, as well as dental caries, tuberculosis, and nervous and mental diseases.

Undoubtedly Laitinen and V. Bunge have given scientific proof that even the moderate use of alcohol (the word "moderate" being employed in a very strict sense) can act injuriously on progeny.

The recent work of Miss Elderton, working with Edinburgh and Manchester statistics, is not a comparison between the children of abstainers and non-abstainers, but between those of moderate and excessive drinkers. This writer has only dealt with the present habits of the parents as regards alcohol and not with their habits before and at the time of procreation. Such superficial work cannot be employed in argument against that of Bunge and Laitinen.

The comparison made by Bezzold of the normal conception curve in Switzerland with that of the conception curve for mentally defective children there, is of much interest, as pointing to a greater proportion of defective children being conceived at those times in the year when excessive use of alcohol is commonest. Müller, working with material in the Zurich institute for epileptics, had similar results.

A. HILL BUCHAN.

THE ORIGIN OF OPTIC-NERVE CHANGES IN TOWER-SKULL.**(285) A CONTRIBUTION TO THE THEORY OF PAPILLOEDEMA.**

(Die Entstehung der Sehnervenveränderungen beim Turmschädel. Ein Beitrag zur Theorie der Stauungspapille.) CARL BEHR, *Neurol. Centralbl.*, No. 2, 1911, S. 66.

THE subject of this paper was a man of 60 years, who had typical oxycephaly with reduced vision, contracted fields, and bilateral post-neuritic optic atrophy without other nervous disturbances, and who, while still under observation, was killed in a street accident.

Each optic nerve was highly atrophied, and at the entrance to the optic foramen showed a circular constriction, apparently due to an abnormal course of the internal carotid caused by a displacement of the roots of the lesser wing of the sphenoid. The carotid, instead of emerging from the cavernous sinus to the outer side of and behind the optic canal, lay on its inner side, and passed beneath and partly in the posterior intradural portion of the canal directly underneath the nerve. The condition is described in detail with two illustrations. Microscopical examination of the nerves confirmed the view that at this point a vertically acting force had compressed them.

Further evidence obtained from the examination of the cerebrospinal pressure in twelve cases of tower skull is discussed, and the author concludes that the changes in the optic nerve in tower-skull are to be attributed to direct compression of the nerve arising from this abnormal position of the carotid artery, and that the concentric contraction of the field of vision is due to the constriction of the peripheral bundles of the nerve. Increased intracerebral pressure may act as an aggravating cause.

As atrophy progresses the nerve becomes smaller, and when it has accommodated itself to the available space the condition remains stationary. Treatment by decompression operations is therefore indicated only in cases where there is pronounced and recent papilloedema, with, at the same time, other signs of increased intracerebral pressure.

Passing from the subject of tower-skull to the consideration of papilloedema, the author is not satisfied that current theories account for the concentrically contracted field with relative preservation of central vision, which so often results. He has found that the optic nerve in such cases shows a definite constriction just behind the optic foramen, where it is crossed by a fold of dura mater, and that the oedema is practically entirely peripheral to this point.

The increased intracerebral pressure forces the brain in every direction, and thus presses the fold of dura down on the optic

nerve, which is compressed against the bone beneath, and in this way the nerve is constricted, causing peripheral atrophy of the nerve fibres. As the atrophy progresses the œdema disappears, because the nerve is now sufficiently small to fit the available space.

The author holds that this theory accounts for the attacks of temporary amaurosis which occur in brain tumour cases, by supposing a sudden increase of pressure acting on the optic nerves and not on the occipital cortex, which would not probably be affected alone, and also for the relative infrequency of papilloedema in tumours of the medulla, pons, and hypophysis, as tumours in these positions tend to elevate the parts around the optic foramina.

H. M. TRAQUAIR.

OPTIC NERVE CHANGES ASSOCIATED WITH CRANIAL

(286) **MALFORMATIONS.** ALFRED GORDON, *N.Y. Med. Journ.*, Jan. 7, 1911, p. 7.

THE patient, a boy of 8 years, had when three months old a series of illnesses, including pneumonia, measles, and prolonged profuse diarrhœa. His head then began to assume a dome-like shape. At three he began to speak and walk, and soon afterwards developed epileptic fits.

At the time of examination his head was typically oxycephalic. Head nystagmus, severe headache and epilepsy were present, otherwise his general condition, including his mentality, was normal. Chorioretinitis and optic atrophy were present in both eyes, and also exophthalmos and nystagmus. The fields of vision were contracted, especially the right, and vision in each eye was equal to $\frac{6}{30}$, not improved by glasses.

The condition is ascribed to inflammatory disturbances of the meninges and bones due to the infectious diseases suffered from in infancy.

Following gradually increasing doses of iodides the fits became very rare, and the headaches were considerably relieved.

The paper is illustrated by charts and a photograph.

H. M. TRAQUAIR.

STUDIES OF THE FIELD OF VISION IN REGARD TO THE

(287) **RELATION BETWEEN THE PERIPHERAL VISUAL ACUITY AND THE COLOUR SENSE, AND ESPECIALLY THEIR SIGNIFICANCE FOR THE PROGNOSIS OF OPTIC ATROPHY.** RÖNNE, *Klin. Monatsbl. f. Augenheilkunde*, Feb. 1911, S. 154.

THIS paper may be commended to all who are interested in the field of vision. The author begins by pointing out that the

boundary of the field of vision is not absolute but relative, and depends on the brightness of the test object and the visual angle under which it is seen (*i.e.* its size in relation to its distance from the eye. This is expressed in millimetres as a fraction, as $\frac{5}{2000}$ or $\frac{10}{300}$, indicating tests made with objects 5 or 10 mm. in diameter at distances of 2000 or 300 mm. respectively). By employing a series of objects with diminishing visual angles (the method of Bjerrum) a series of fields can be charted—the smallest angle giving the smallest field—whose boundaries are approximately concentric rings or isopters.

Normally these isopters lie very close together at the periphery of the field, so that the fields for $\frac{10}{300}$ and $\frac{20}{300}$ may be practically identical; it is only when the angle is reduced below a certain size that the fields become smaller. In pathological conditions, however, there may be 40° of difference between the size of the field for $\frac{10}{300}$ and that for $\frac{20}{300}$. Therefore, to translate the author's words, "an examination of the field of vision in which only one size of object is used is as incomplete as an examination of visual acuity would be with only one size of type."

Examination of the fields for colours is not to be considered a substitute for Bjerrum's method, but is of great use in ascertaining whether the normal relationship exists between the field for colour and that for white. The fields may be contracted proportionately or disproportionately (the colour field being extremely small in relation to the field for white), indicating in the former case a stationary or relatively stationary condition, in the latter a progressive affection. Thus where disproportion is marked the prognosis is bad. The histories of eighteen cases are given with twenty-four charts of fields, showing both types.

The paper also contains much of interest in regard to the exact function which is tested in investigating the field of vision, the occurrence of the "nasal step" and sector-shaped and other defects in the field, and the suggestions afforded by these as well as by proportional and disproportional contraction in regard to the position and mode of extension of the pathological process in the optic nerve.

H. M. TRAQUAIR.

**CALORIC NYSTAGMUS IN CHLOROFORM-ETHER AND IN
(288) SCOPOLAMINE-MORPHINE ANÆSTHESIA.** ROSENFELD,
Neurol. Centralbl., Nr. 5, 1911, p. 238.

THE rapid nystagmus of vestibular origin produced by the rotation and caloric tests must be dependent on the integrity of certain cerebral tracts. This paper gives an account of the changes in the "caloric" nystagmus during the unconsciousness induced by chloroform-ether and scopolamine-morphine.

In ordinary chloroform-ether anæsthesia, where the pupils are of medium size and reacting briskly to light, the syringing of one ear with cold water produces, instead of a rapid nystagmus to the opposite side, a fixed or slowly repeating deviation to the same side. If the anæsthesia is very deep, this deviation is extreme. When the danger point is reached—the pupils widely dilated and not reacting—the eyes remain fixed in the mean position. In the sleep which follows a long period of deep anæsthesia, syringing with cold water gives for one to two hours only this slow or fixed deviation.

Similar or very slightly modified results are obtained in cases of scopolamine-morphine narcosis and in cases of unconsciousness from various morbid causes.

It is suggested that from the point of view of prognosis the above results might be of service in cases of unconsciousness from any kind of intoxication, such, for example, as morphia poisoning, alcohol poisoning, or severe delirium tremens.

JOHN M. DARLING.

PSYCHIATRY.

CLINICAL ASPECTS OF SOME VARIETIES OF EXCITEMENT.

(289) W. T. MUNRO, *Lancet*, March 25, 1911, p. 801.

A SHORT account of some typical cases with mental excitement. It includes cases of (1) mental exaltation or mania proper, (2) delirium tremens, (3) general paralysis, (4) katatonic excitement, (5) semi-conscious epileptic states, (6) dementia præcox.

J. H. HARVEY PIRIE.

SEVEN CASES OF AMAUROTIC IDIOCY (TAY-SACHS DIS-

(290) EASE). H. B. CARLYLL and F. W. MOTT, *Proc. Roy. Soc. of Med.* (Path. Section), March 1911, p. 147.

THIS important paper includes a clinical account of seven cases, a short historical summary, and a histological and chemical examination of the nervous structures from four cases. There are numerous illustrations (clinical and histological). We give the writers' conclusions almost in full. They would prefer the name Tay-Sachs disease until the pathogenesis is known. The disease is probably a failure in the germinal determinants of the nervous system peculiar to the Jewish race. The hypothesis is put forward that it may be due to a failure in the nuclear material of the neurones to build up the nucleo-protein Nissl substance out of lipid substances contained in the cytoplasm, which first have to be decomposed by a nuclear ferment. There is evidence to show

that there is a progressive failure of Nissl substance proceeding from without inwards towards the nucleus, and a corresponding accumulation of a fatty substance of the nature of a lipoid, which, accompanied by a process of hydrolysis, would cause a swelling of the cell and destruction of the intra-cellular neuro-fibrillary network. The chemical analysis does not throw much light on the question: diminution of the lipoid forms of phosphorus and sulphur, probably due to deficient myelin and corresponding increase of extractive forms possibly due to a breaking down of the more complex to simpler forms of lipoids. The morphological changes are quite characteristic—all the ganglion cells stain more or less intensely with stains which stain myelin or fat. With Marchi, however, the staining is not so satisfactory as in the case of degenerated myelin; consequently it is more correct to say that the cytoplasm *may be on the way* to complete decomposition. Whereas the ganglion cells rarely show coarse globules of stained fatty substances, there are immense numbers of cells containing these coarse globules, and forming what Alzheimer terms *Körnchenzellen*; they are neuroglia cells which have taken up the fat from the dead and decayed ganglion cells. Other methods of staining show that the intra-cellular fibres are ruptured and destroyed, leaving only the peripheral neuro-fibrils. In the cortex, the fibrils of the apical dendrons are seen proceeding to the nucleus, which is usually forced up into the apex of the pyramid. The cells of the retina, stained with Scharlach, show changes similar to those of the central nervous system. In two brains there was an accumulation of *Körnchenzellen* along the course of the blood vessels. There was a great overgrowth of neuroglia fibrils, especially in the superficial layers, both of cerebrum and cerebellum, the amount being proportional to the duration. Throughout grey and white matter the proliferated neuroglia cells are of large size, with coarse branching fibres, and they embrace the ganglion cells, as if they were absorbing the phosphorised substances necessary for nuclear proliferation.

J. H. HARVEY PIRIE.

Reviews

DIE AKUTE POLIOMYELITIS BZW. HEINE - MEDINSCHE KRANKHEIT. IVAR WICKMAN. Berlin: Julius Springer, S. 108, 1911. Price M. 5.

THIS book, published separately, is part of Professor Lewandowsky's "Handbuch des Neurologie." The name of the author is a

sufficient guarantee as to the quality of the work, so well known is he from his previous publications on this subject. Commencing with a short historical survey and affirming that the sporadic and epidemic forms are the same disease, the etiology is next discussed, chief prominence being given to recent experimental work in monkeys. The pathological anatomy is fully gone into in all its stages and illustrated by figures from the writer's previous works. Over a third of the book deals with the symptomatology of the different forms, diagnosis and prognosis receive adequate consideration, and the main facts of the epidemiology are well brought out. That treatment lags behind is shown by the fact of its receiving only two pages, but hope in the future may be gathered from the section on prophylaxis. Finally, there is a very full bibliography. Throughout the whole book there is constant reference to the work of others, the wide world over, evidencing very wide reading, and yet this is no mere compilation, as there is everywhere the tone of full and intimate personal knowledge of the subject, and we could not recommend the work more highly as a comprehensive and up-to-date presentation of our knowledge concerning poliomyelitis.

J. H. HARVEY PIRIE.

THE WASSERMANN SERO-DIAGNOSIS OF SYPHILIS IN ITS APPLICATION TO PSYCHIATRY. FELIX PLAUT. Translated by Smith Ely Jelliffe and L. Casamajor. Nerv. and Ment. Monograph Series. New York, 1911. Price \$2.

THIS book will be found of great use to all those engaged in sero-diagnosis and to all interested in parasymphilitic and other psychoses. It commences with a survey of the development of this means of examination, and comparison is made of the various theories that attempt to explain the nature of the reaction.

The practical utility of the different methods is critically examined, and the technique of that used in Wassermann's laboratory is thoroughly explained.

Plaut's results indicate that in general paralysis the cerebro-spinal fluid invariably gives a positive reaction, while in cerebral syphilis it is only occasionally obtained. This result, along with the examination of the serum, is of great assistance in the differential diagnosis of these two affections.

The diagnosis of general paralysis from post-traumatic, alcoholic and manic-depressive psychoses is fully entered into, and the clinical history of a large number of cases is given along with the reactions in the cerebro-spinal fluid and the serum. The value of this method of examination is shown in cases of juvenile paresis and in other cases of mental enfeeblement of a hereditary

syphilitic origin. In the former both serum and cerebro-spinal fluid are positive—a result similar to that obtained in acquired general paralysis—while in the latter usually only the serum reacts positively.

The book closes with some comparative investigations into the cytological and serological examination of the cerebro-spinal fluid in paresis and syphilitic insanity, and mention is made of the influence of treatment in these by means of mercury, and the result of this on the Wassermann reaction.

R. DODS BROWN.

BOOKS AND PAMPHLETS RECEIVED.

D. Fraser Harris. "The Physiology and Hygiene of Sleep." (Annual Public Lecture on "The Laws of Health.") Birmingham: Cornish Brothers, 1910.

L. P. Müller. "Beiträge zur Anatomie, Histologie und Physiologie des Nervus vagus" (*D. Arch. f. klin. Med.*, Bd. 101).

Albany Med. Annals, March 1911.

Albany Med. Annals, April 1911.

William Browning. "Is there such a Disease as Neurasthenia?" (*N.Y. State Journ. of Med.*, Jan. 1911).

Ernest Jones. "Das Problem des Hamlet und der Ödipus-Komplex." Übersetzt von Paul Tausig. Leipzig und Wien: Deuticke, 1911.

Felix Plaut. "The Wassermann Sero-Diagnosis of Syphilis in its Application to Psychiatry." Nervous and Mental Disease Monograph Series, No. 5. New York, 1911.

André-Thomas. "La Fonction Cérébelleuse." Paris: O. Doin et Fils, 1911.

Hartenberg. "L'Éreuthophobie et son Traitement." Paris: Masson et Cie, 1911.

Schlesinger. "Erfahrungen über das Ehrlich-Hata-sche Präparat in internen und neurologischen Fällen" (*Wien. med. Wchnschr.*, Nr. 46).

Minor. "Zahlen und Beobachtungen aus dem Gebiete des Alkoholismus" (*Ztschr. f. d. ges. Neurol.*, Bd. 6, H. 4).

Bernard Hart. "Freud's Conception of Hysteria" (*Brain*, 1911).

Farnell. "An Extracerebral Tumour in the Region of the Hypophysis" (*N.Y. Med. Journ.*, March 1911).

Klinik f. psych. und nerv. Krankh., Bd. 6, H. 1, 1911. Halle: Marhold.

Yandell Henderson. "Fatal Apnoea and the Shock Problem" (*Johns Hopkins Hosp. Bull.*, Aug. 1910).

Arch. Brasil. de Med., No. 1, et Suplemento do No. 1, 1911.

Heinrich. "Beiträge zur Diagnose und Therapie der genuinen Epilepsie" (*Epilepsia*, Bd. 2, Nr. 3).

The news that ALEXANDER BRUCE
has passed away will be received by
the readers of this Review, and by
Neurologists all over the world, with
profound regret, by his many friends
with the deepest sorrow

Review of Neurology and Psychiatry

Original Articles

AGRAPHIA IN A CASE OF FRONTAL TUMOUR.¹

By C. MACFIE CAMPBELL, B.Sc., M.B., Ch.B.,
Associate in Clinical Psychiatry, Psychiatric Institute, Ward's Island,
New York.

(With Plates 4, 5 and 6.)

THE CASE of agraphia, which is here reported, is somewhat unusual, in so far as the agraphia was present as a comparatively isolated symptom, at least at an early stage of the patient's sickness; even when the clinical picture became complicated by a certain difficulty in finding words and in responding to more complicated spoken commands, the agraphia was out of proportion to the other features of the disorder.

Agraphia is a banal symptom in various forms of aphasia. The comparatively isolated occurrence of the symptom, independent either of an aphasic disorder or an apraxia, is rare, and von Monakow holds that an absolutely "pure" agraphia only occurs as a hysterical phenomenon. Since Liepmann's work on apraxia, cases of agraphia have been examined from the point of view of apraxia, and the relation of the agraphia to the general apraxia in certain cases made clear. A brief reference may be made to cases of agraphia already published.

¹ Read before the New York Neurological Society, November 1, 1910.

Pitres (1), in 1884, reported the case of a man of 31, who, after an attack with speechlessness and right-sided paralysis, was left with no aphasic symptoms, but was quite unable to write with the right hand, although it was quite mobile; there was a slight impairment of the muscle sense; the patient could write freely with the left hand. There was no autopsy.

Gordinier (2), in 1899, published a case of frontal tumour with autopsy; the patient, who showed no aphasic symptoms and was able to read perfectly, showed a complete agraphia. Gordinier uses the case to support the view that there is a writing centre in the second left frontal convolution. Déjerine, in view of the extent of the tumour, and of the presence of progressive mental dulness and of ataxia in the clinical picture, does not admit the conclusions of Gordinier.

Wernicke (3) reported a case of agraphia in 1903; the patient, however, in addition to an almost total agraphia, showed a slight difficulty in understanding spoken words, and also some ataxia of the right hand, besides impairment of sensibility.

Erbsloeh (4), in 1903, observed an arteriosclerotic woman of 63, who during a mild excitement lost the power of writing spontaneously or to dictation for eight days, although no other focal symptoms were observed; the patient could copy promptly.

McConnell (5), in 1905, published a case of tumour of the left first and second frontal convolutions, with motor agraphia as its chief localising symptom. The patient, a right-handed carpenter of 28, from 1899 to April 1904 had a number of general convulsions without residual symptoms; during the year preceding admission he had difficulty in thinking, and impaired memory of the recent past. In May 1904 he began to have daily spells in which the right side of the face twitched, but without loss of consciousness. There was slight weakness of the lower half of the right face, with slight impairment of the sense of touch and of pain over the same area; the speech was extremely thick; there was no aphasia. The patient was able to write perfectly from copy, but could not write spontaneously nor from dictation; he could not write his name legibly, a simple phrase was distorted beyond recognition and many of the letters were incorrectly formed.

An operation was performed and a tumour was found in the region of the foot of the second frontal convolution, "encroaching

somewhat on the lower half of the first, slightly upon the upper posterior portion of the third frontal convolutions and the anterior edge of the precentral convolution." The tumour was completely removed. The disorder of writing did not immediately disappear after the operation, but three weeks later the patient was able to write a very satisfactory letter.

Heilbronner (6), in 1906, published a case of apractic agraphia without autopsy. The patient, a right-sided hemiplegic, with no aphasic disorder, had left-sided apraxia and agraphia; although unable to write spontaneously or to dictation, he was able to copy; similarly, he was able to copy movements, which he could not spontaneously initiate. The agraphia went parallel with the apraxia.

Liepmann and Maas (7), in 1908, reported with autopsy a case which clinically resembled that of Heilbronner; the lesion involved the white matter of the frontal convolutions, of the gyrus fornicatus, and a large part of the corpus callosum; the cortex of the frontal convolutions was intact.

Meyer (8), in 1908, reported the case of a left-handed man with left-sided hemiplegia who was unable to write words, although he wrote letters perfectly; he did not, however, write the letters which were asked for. Meyer considered the case analogous to a pure motor apraxia. The patient recovered.

In the following case there was no evidence of apraxia, and the agraphia was present at a period before a certain difficulty in finding words and in carrying out complicated orders made the clinical picture more complex.

The patient, a right-handed woman of 55, was of rather low educational level, but before her sickness was able to write a simple letter with some mistakes in spelling; she was admitted to the clinical service of the Psychiatric Institute on June 1, 1910, and died on September 3. About five years before admission she had occasional attacks of unconsciousness; after one year these attacks ceased. During the first part of 1910 she was rather dull and listless; she talked little and complained of headache. At times she appeared to be somewhat confused and to have difficulty in understanding what was said to her; a friend noticed that the patient *would continue to shake hands* for a rather unusual length of time. She neglected the house, ceased to care for herself, and was finally certified as insane.

On admission the patient showed a dull, torpid state, with no abnormal mental trend. She was quite contented, knew where she was, did not think that her mind was affected, but admitted that sometimes she got a little mixed up in the head. She showed glaring discrepancies in her dates in giving an outline of her life, *e.g.* she said that she was married at twenty-four in the year 1884, that she was born in 1879; she could not be brought to see this discrepancy; she answered correctly several simple questions on general information, but made glaring errors in simple counting; 7 from 100 = 99; she corrected this to 92. 7 from 92? She persisted in saying 92, although she had not shown any perseveration in her previous responses. The patient could give no trustworthy account of the development of her sickness.

Her physical condition was as follows: The deep reflexes were exaggerated and practically equal on the two sides. The plantar reflex was flexor on the two sides. There was no sensory disorder made out, but the patient did not co-operate well. The pupils reacted well on accommodation, but only slightly to light; they were small and equal. Eye-grounds (Aug. 1, 1910): Right, no choked disc, veins not large, nor vessels tortuous; left, on the nasal side the margin could barely be made out (Dr Holden). The right side of the face was slightly weaker than the left; *no difference in the hand grips of the two sides was observed.* The patient's *speech* was defective; in saying the test words she transposed syllables and slurred the words; she frequently stuck on a syllable and was unable to finish the word.

Her *writing* was markedly defective (Fig. 1); she could not write her name correctly; she began her first name well, but *repeated several of the letters*, then finished it almost correctly. On a second attempt she could not write the last syllable of her first name; more unusual words were still further distorted. Manhattan State Hospital was written so defectively that only the middle word was recognizable; hospital was rendered by *ka* followed by a series of n's and by a meaningless termination. The word brigade was rendered merely by a long series of up and down strokes.

The patient, therefore, showed a writing defect which was not explained by the presence of either a sensory or a motor aphasia;

General (Name)
General
706 N. 1st St. (Address)
708 6th St.
William (Manhattan State
General Hospital)
General (Brigade)

FIG. 1.—Sample of writing, June 2, 1910.

General (Name)
William (Manhattan
General State
General Hospital)

FIG. 2.—Sample of writing, July 13, 1910.

To illustrate Paper by Dr. Macfie Campbell.

she was able to understand satisfactorily all the questions in a detailed mental examination; there was no motor aphasia. Nor did the agraphia form part of an apraxia, for, on later examination, the patient was found to be able to indicate with her right hand the use of objects; she was able to carry out descriptive movements and to perform movements requiring a certain delicacy (threading a needle, sewing on a small button). The agraphia, therefore, was a rather independent symptom at this period of the disorder. The other phenomena of a motor nature were a slight right-sided facial weakness, a tendency to rhythmical movements of the right hand, and a well-marked dysarthria.

During the further course of the disorder the clinical picture became somewhat more complicated, right-sided symptoms were a little more prominent, and the general level of the patient's mentality varied considerably; but, even although the patient later showed occasional difficulty in finding immediately the correct name for an object, and was unable to carry out some slightly complicated commands, the agraphia always remained out of proportion to the other features of the disorder. The history of the patient after her admission to the hospital may be given very briefly. Soon after admission she complained of severe headache and of shivering all over, especially on the *right* side. One month after admission her writing had become distinctly worse (Fig. 2).

An episode of stupor on the 28th of July left slight residual weakness of the right face, arm, and leg.

During August her condition showed on the whole little change, although there was a striking variability in the patient's responsiveness from time to time; she would occasionally give no evidence of hearing a simple order.

The *agraphia* was very pronounced. The patient was now quite unable to write her name; after the first letter she made an illegible scrawl. When the letters of the alphabet were dictated to her she made scrawls, the majority of which were unrecognizable, although she occasionally began the letter well (Fig. 3).

She could not copy the letters any better than she could write them to dictation (Fig. 4); printed letters were as badly copied as written letters. Copying of letters with the left hand was on the whole done slightly better than with the right.

The patient was asked to copy the outline of a fish. With the left hand she copied in a much more systematic and satisfactory manner than with the right hand; the aim was good although the execution was bad; she first drew the outline of the body, then the two fins, then completed the head. When asked later what the product was she said "a whale." With the

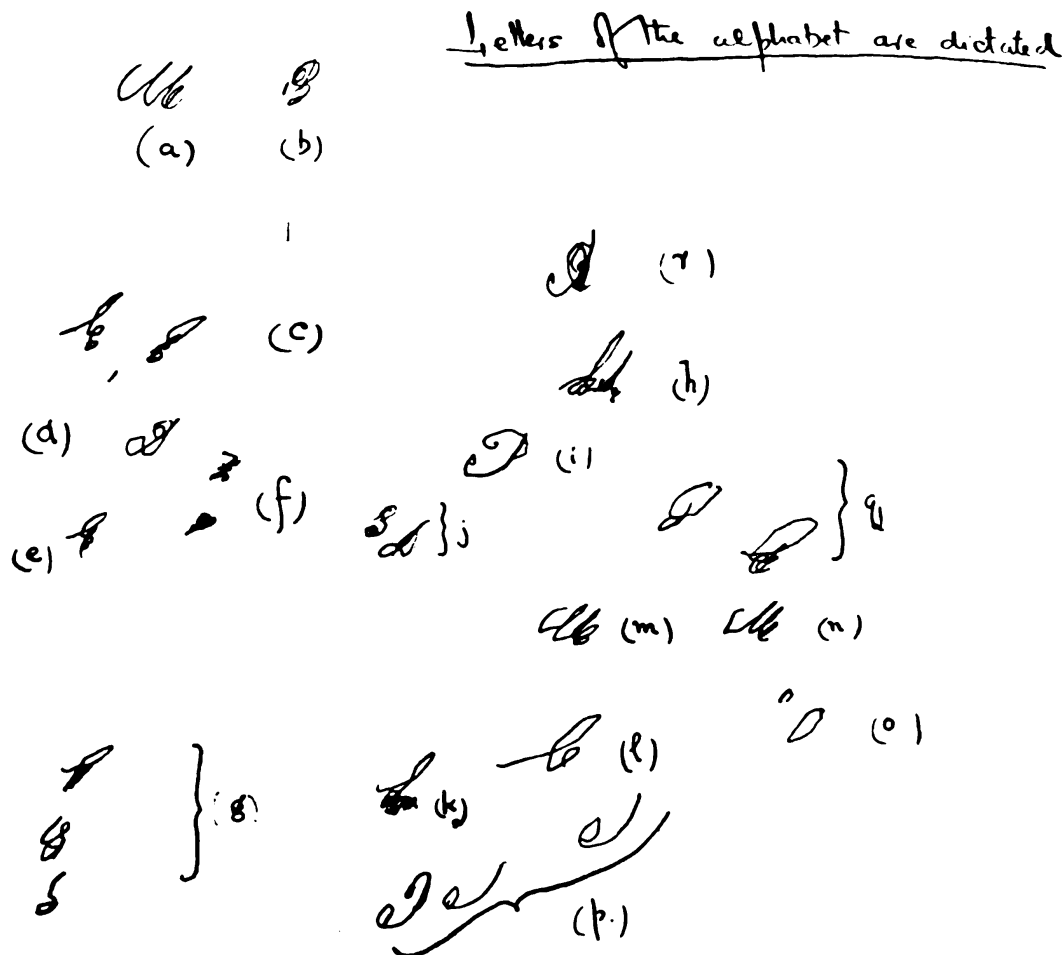


Fig. 3.—Writing of letters from dictation, Aug. 7, 1910.

right hand she copied in a much less systematic way, the final product was worse, and, when asked later what it was, she failed to recognize it.

The patient understood spoken orders, if simple, and carried them out correctly; she did not carry out correctly some slightly complicated orders—e.g. Put your left hand on right ear. She put her right hand on nose. The order was repeated.

She put her right hand on right ear. After four repetitions she was unable to carry out correctly the order. Rise up, walk twice round the chair, knock three times on door: she carried out this order correctly, but knocked an indefinite number of times.

The patient was able to read quite promptly; she read somewhat carelessly at times, but when her attention was again

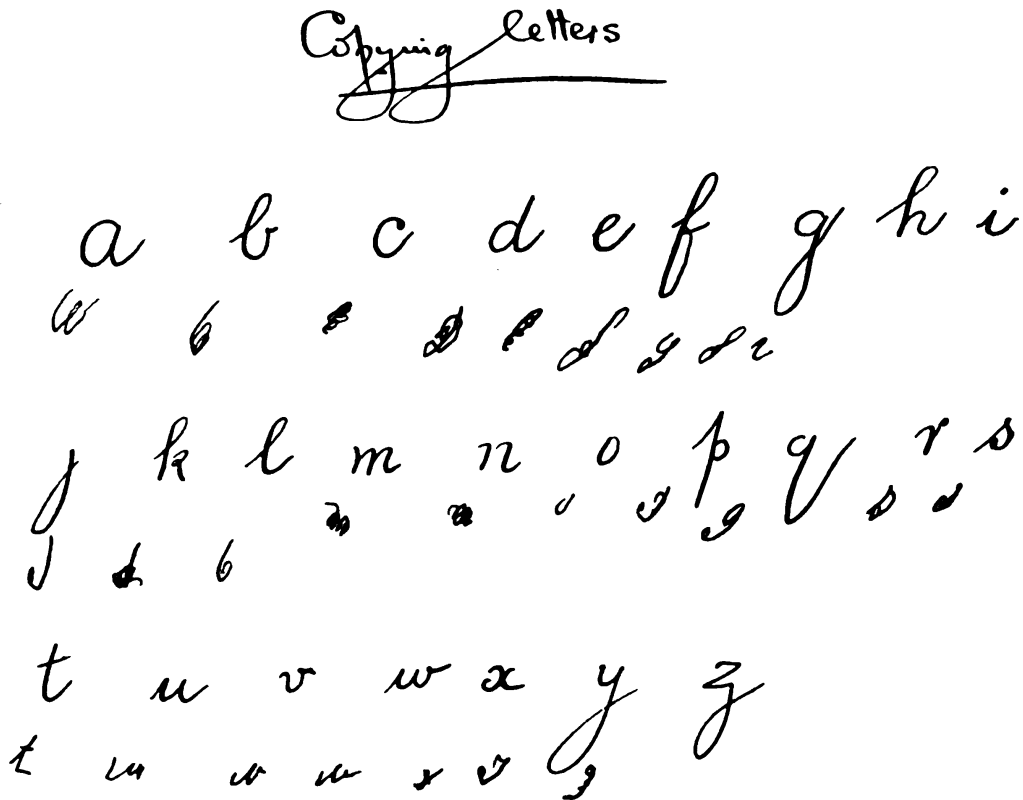


Fig. 4.—Copying of letters (right hand), Aug. 7, 1910.

focussed, she would read quite correctly. The patient had occasional difficulty in naming objects: thus she called a screen "a compass"; a postcard, "a complination card, a bladder (? blotter) where you write the letters on, a postal card"; a heart of stone, "a sort of a ha—a hot—a hot cross bun—a heart cross bunce." What is it? "A heart," the word being said very slowly.

The patient showed slight fumbling with the right hand in buttoning a coat, but she could thread a needle and sew

accurately. She was able to make descriptive movements in response to spoken orders, *e.g.* "show how you turn a key."

The motor condition of the right hand was interesting; when the strength was tested (Aug. 1), at first slight weakness was observed, but in a little while the grip seemed nearly as strong as that of the left hand; when told to let go, the patient did not at once relax, but required to be urged to let go.

A coarse tremor of the right hand was frequently observed, especially during mental effort; at times the nurse would think that the patient was beckoning to her, when the patient was making these involuntary movements; at other times the patient would keep tapping her cup with her spoon in a similar involuntary way. She would kick off her slipper with similar involuntary movements of the foot.

On August 7 slight weakness of the right face, arm, and leg was demonstrated. No difference in the sensibility of the two sides was made out.

The dysarthria, which was present on admission, continued; but if the patient were strongly urged, she was able to pronounce even the test phrases satisfactorily.

On Sept. 2, at 6.40 P.M., the patient, after an enema, had an attack of dulness with rigidity of the right leg and arm, and occasional clonus of the right hand; she could not speak, but carried out simple spoken commands. She died seven hours later.

Autopsy (Dr. Rusk).—"Calvarium: is symmetrical, varies from $3\frac{1}{2}$ to $4\frac{1}{2}$ cm. in thickness, the diploe is fairly marked. The left side of the cranium antero-laterally shows slightly less diploe than the corresponding parts at the opposite side. The dura is diffusely thin. Amount of cerebro-spinal fluid is greatly reduced; the *brain surface* appears *dry*; the *convolutions* appear *diffusely compressed*, this phenomenon becoming less marked posteriorly. In the *left frontal region*, separating the first and second convolutions, is a thin-walled cyst (Fig. 5), slightly raised over the general surface, 6 by 4 cm. in diameter, its long axis running with the line of the sulcus; the cyst appears to be covered with adherent pia, and along the margin at least shows no organic connection with the brain substance. The mesial aspect of the left hemisphere, as one passes towards the corpus callosum, bulges inwards and downwards, and there

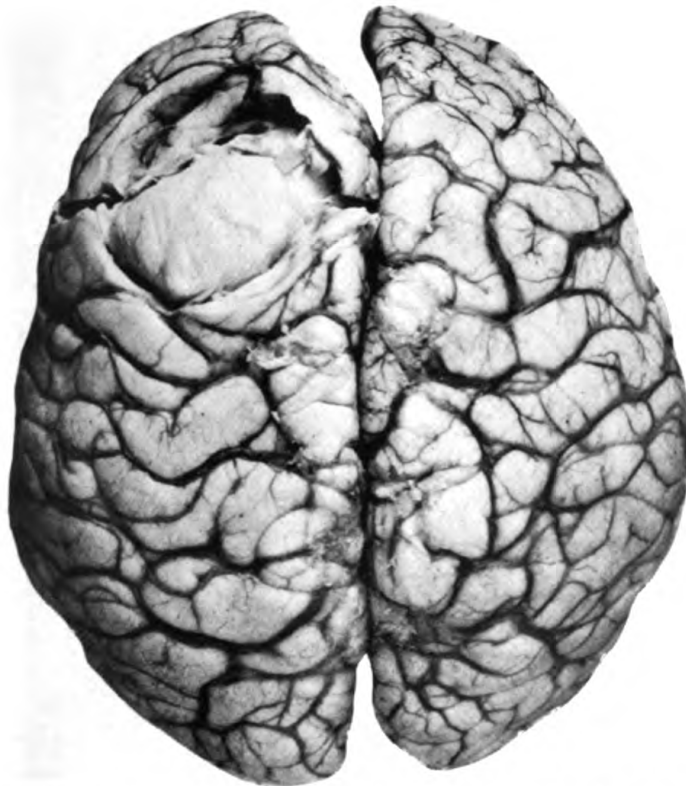
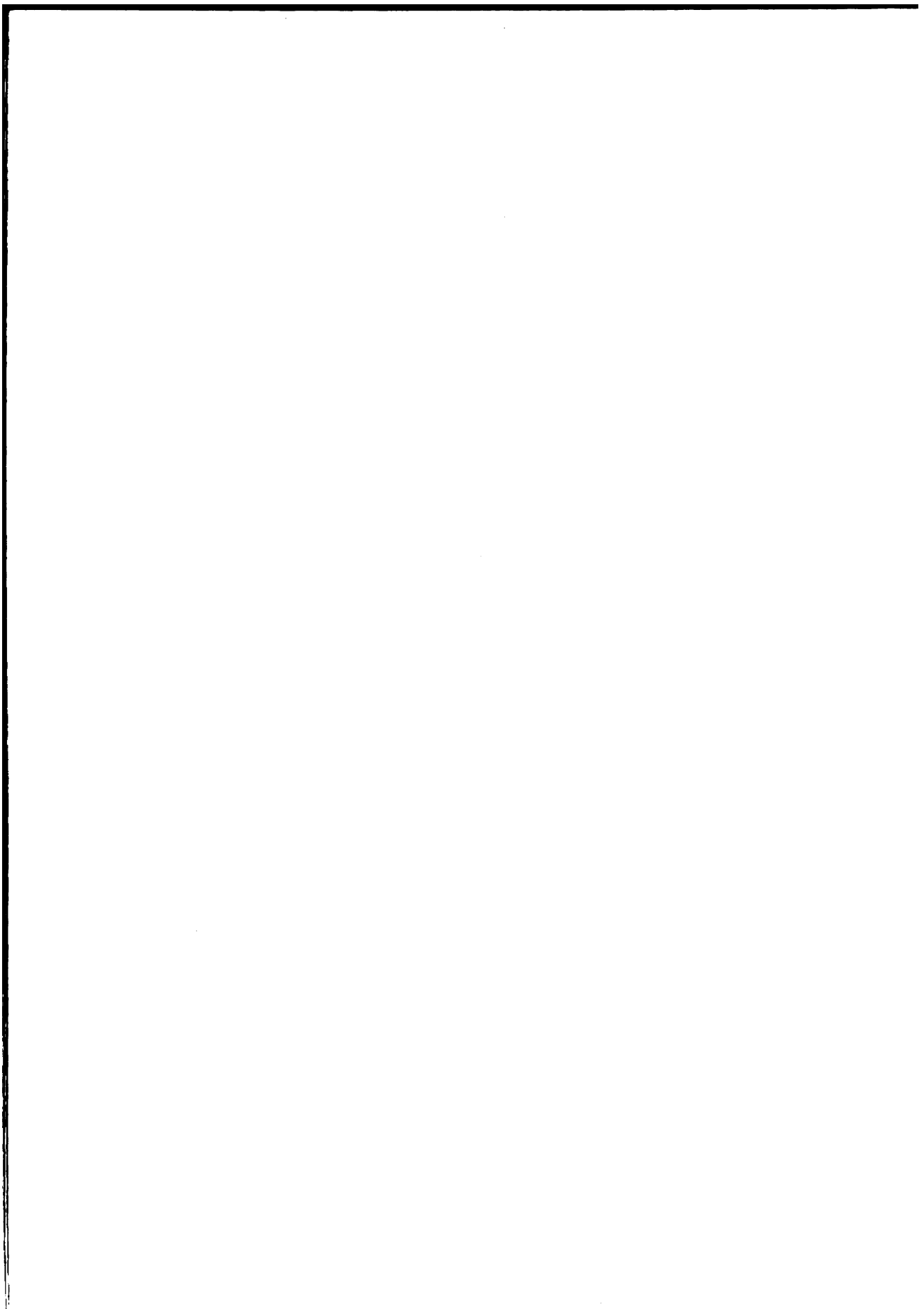


FIG. 5.—Photograph of brain showing the cyst in the left frontal region.

To illustrate Paper by Dr Macfie Campbell.



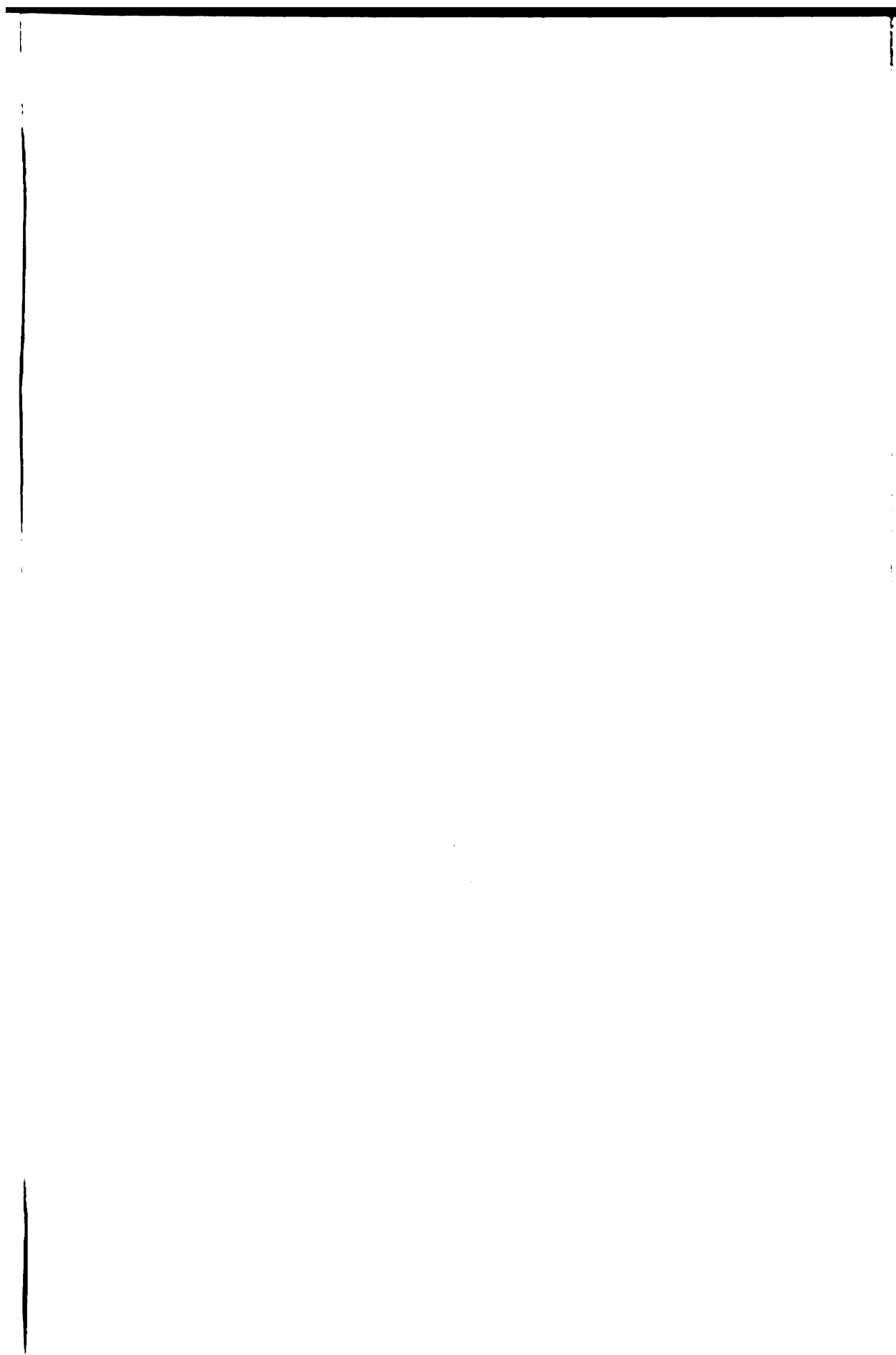




FIG. 6.—Micro-photograph of small cyst in the left calcarine cortex ; the connection with the pia mater is not shown in this section. 13 ×.

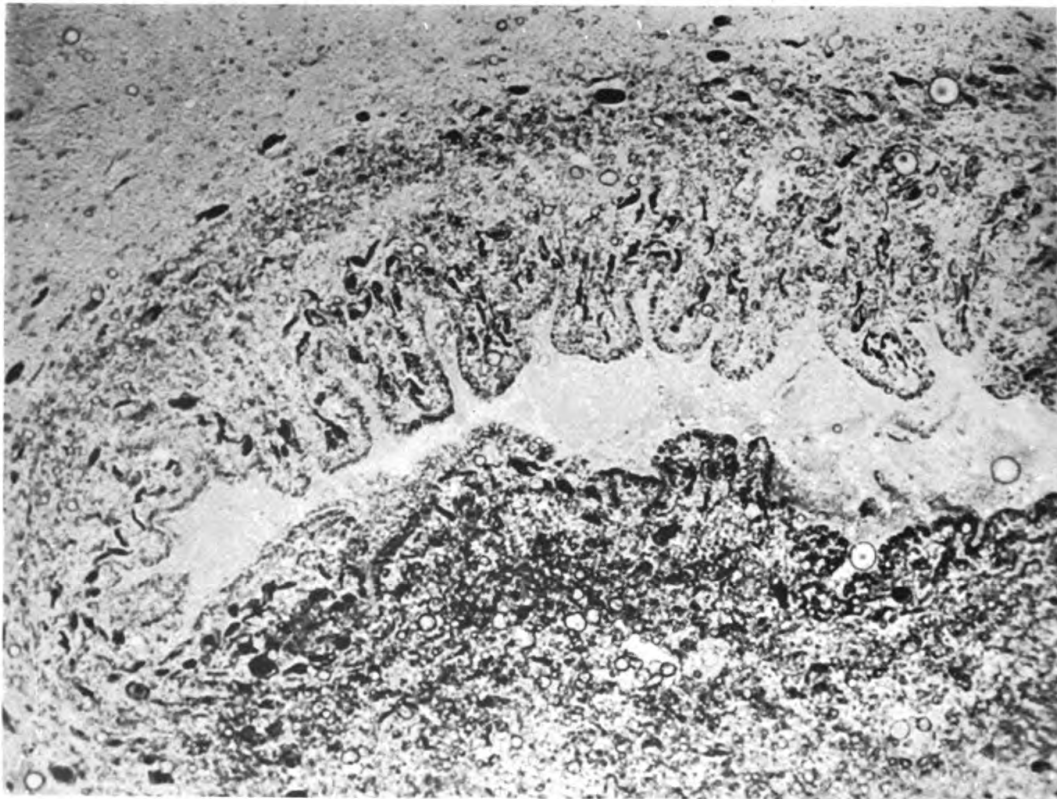


FIG. 7.—Higher magnification of area A, shown in fig. 6.

To illustrate Paper by Dr Macfie Campbell.

is a corresponding depression of the opposite hemisphere. On the mesial aspect of the left first frontal, overlying the tumour, the cortex shows a number of low flat spots representing slight herniæ, the largest are about 3 mm. in diameter; the direction of the cyst from its vertex is downwards and inwards. Palpation of the second frontal convolution is quite firm; the cerebellum is moderately compressed in the foramen magnum. There is very slight asymmetry of the basal parts; except for the slight herniated protrusions noted above, no other hernia is found. The vessels at the base show slight atheroma. There are no granulations in the ventricles.

"On opening the cyst its greatest depth is $6\frac{1}{2}$ cm.; it contains a clear fluid containing cysts, some of which are free, others lumped together or adherent to the whole by pedicle of varying thickness. The walls of all these cysts are extremely thin and clear."

A transverse section was made through the middle of the cyst, and the brain was cut in serial slices of less than 1 cm. in thickness. The lower wall of the cyst lay in the plane of a horizontal section through the splenium; the basal nuclei were compressed from before backwards with no evidence of destruction of tissue. The posterior limit of the cyst corresponded with the central fissure. On a thorough examination of the brain there was found a minute cyst in the left calcarine area (Fig. 6), one in the region of the left geniculate ganglion, and a small pea-like body in the posterior limit of the right supra-marginal convolution; these bodies were all in connection with the pia mater. For the interpretation of the clinical picture these minute bodies were of no importance.

The structure of the cyst in the calcarine cortex, with the marked deposit of lime salts, is shown in the accompanying photographs (Figs. 6, 7).

The clinical symptoms in the above case were evidently to be correlated with the presence of the large cyst in the frontal lobe. A cystic tumour is not that type of lesion most suited for purposes of exact localisation, and in other cases, *e.g.* that of Gordinier, the difficulty of interpretation of the symptoms has been considerably increased by the nature of the lesion. On the other hand, while a tumour with its diffuse effects of pressure may not give the same type of information which a small

destructive lesion may yield, it has the advantage that it may cause variable degrees of functional involvement, and thus throw valuable light on the actual mechanism of such a disorder as agraphia. With such a lesion we are forced to think more in terms of the actual disorder of function and less in terms of hypothetical anatomical constructions.

The clinical setting, in which the agraphic disorder occurred in this case, was of interest. The first symptom to be noticed was the tendency of the patient to persevere somewhat in crude movements of the right arm, *e.g.* in shaking hands; after admission to the hospital there was noticed the same tendency to motor perseveration, and also inability to relax promptly, as well as a want of spontaneous utilization of the arm, without there being any reduction in the muscular force of the arm when innervated (there later developed slight weakness). This lack of spontaneous utilization, as opposed to an actual loss of power, is a symptom which has to be carefully attended to in a study of motor disorders, and may correspond to a less severe or to a less direct involvement of the motor mechanism in question. If it be considered to be due to a less direct involvement of the motor mechanism, the simplest supposition is that the lesion involves a preliminary elaborative mechanism, which is adjacent to the motor area and to a large extent may overlap it. That one part of the cortical area in the neighbourhood of the motor area is of special importance for the specific function of writing seems probable. The present case shows, at any rate, that the function of writing may be seriously interfered with by a lesion which at the same time interferes in a special way with the utilization of the right arm, not in the way of an apraxia.

In the sense, therefore, that the function of writing is specially vulnerable by a lesion in the frontal region, the site of whose disturbing action is still more precisely defined by the involvement of the motor mechanism, we may talk of a special station or "centre" for writing in this region, so long as we do not think of the term in too crude an anatomical sense.

I wish to thank Dr Hoch, Director of the Psychiatric Institute, for permission to publish the case, and Dr C. I. Lambert for the photographs of the brain.

REFERENCES.

1. Pitres. "Agraphie motrice pure," *Rev. méd.*, 1884, p. 855.
2. Gordinier. "A Case of Brain Tumour at the Base of the Second Left Frontal Convolution," *Amer. Journ. Med. Sc.*, Vol. cxvii, p. 526. "Arguments in Favour of the Existence of a Separate Centre for Writing," *Amer. Journ. Med. Sc.*, Vol. cxxvi, p. 490.
3. Wernicke. "Ein Fall von Isolierter Agraphie," *Monatsschr. f. Neur. u. Psych.*, Vol. xiii, p. 241.
4. Erbsloeh. "Ein Fall von Isolierter Agraphie und Amnestischer Erinnerungsunfähigkeit," *Neurol. Centralbl.*, Vol. xxii, p. 1053.
5. M'Connell. "A Case of Tumour of the Left First and Second Frontal Convolution with Motor Agraphia as its Chief Localizing Symptom: Successful Removal of the Tumour," *Univ. of Penn. Med. Bull.*, July-August 1905.
6. Heilbronner. "Ueber Isolierte Apraktische Agraphie," *Münch. med. Wochenschr.*, Vol. liii, p. 1897.
7. Liepmann and Maas. "Fall von linksseitiger Agraphie und Apraxie bei rechtsseitiger Lähmung," *Journ. f. Psych. u. Neurol.*, Vol. x., p. 214.
8. Meyer. "Apraktische Agraphie bei einem Rechtshirner," *Centralbl. f. Nerven- u. Psych.*, Sept. 1908, p. 673.

**DISSEMINATED SOFTENINGS IN THE SPINAL CORD
IN A CASE OF PANCREATIC CANCER.**

By D. H. PAUL, M.D.,

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Northern Hospital, Manchester.

(With Plates 7 and 8.)

THIS is one of a series of six cases of visceral cancer which all showed pathological changes in the spinal cord. There were clinical signs of irritation, and the pathological appearances were such as are rarely seen in the spinal cord of cancer cases, though possibly the condition would be found oftener if the nervous system were subjected to microscopical examination.

Similar appearances to those about to be described have been noted by other observers. Disseminated foci of softening, or myelitis as some call them, are found in cords taken from cases of pernicious anæmia, and I have seen them also in a case of Addison's disease. Nonne (1) has observed these foci in

leucæmia and septicæmia, and considers they may be due to myelitis or multiple hæmorrhages, but these myelitic foci and hæmorrhages, although co-existing, are met with independently of each other. They occur in all regions of the cord, and even in the medulla. The myelitic foci described by Nonne are characterised by swelling of the axis-cylinders, and even destruction of them, unaccompanied by any neuroglia reaction or the presence of compound granular corpuscles. The foci are intimately connected with the vessels, which are often thickened and hyaline, or may even be obliterated (Lenoble) (1).

The hæmorrhagic foci contain many compound granular corpuscles, and blood in all stages of re-absorption. The myelin in the affected area is fragmented and atrophied, the axis-cylinders are swollen at first, then disappear, and the neuroglia is proliferated. It is quite common to find softenings in the cord in Caisson disease, which are apparently due to gas emboli in the vessels inducing an ischæmia. Nikiforoff (2) found, twenty-four hours after the commencement of the disease, small foci in the white matter; the glial meshwork was sometimes empty, sometimes filled with more or less swollen axis-cylinders, round which was a myelin sheath greatly reduced in size. The vessels were congested, the perivascular lymph sheaths dilated, with here and there small isolated hæmorrhages; at a somewhat later stage (fifteen days) Leyden (2) found similar changes, and, in addition, compound granular corpuscles lying in the tissue spaces. According to the above authors, the foci seemed to correspond with the distribution of the vessels in the cord.

Recently Boycott and Damant (3) have induced Caisson disease experimentally in animals, and the part of their paper which deals with the occurrence of necrosis in the cord is extremely interesting. This necrosis is confined to the central portions of the white matter; the periphery and the grey matter were unaltered. Without going into the incidence of these softenings with regard to the special region of the cord affected, it is interesting to know that the lesions can be correlated with the "thrombotic lesions—so-called myelitis—in man."

It will be seen, from the following description of the cord lesions in this case of pancreatic cancer, that these are not truly "myelitic," are better described by the term "softening," and

are morphologically similar to those found in the above conditions.

These foci of softening are of clinical interest, and should be considered in the differential diagnosis of irritative lesions in the cord.

I was recently told the history of a case in which the symptoms consisted in a rapidly developing weakness of the muscles of the shoulder girdle, associated with a considerable degree of pain. No definite diagnosis was made, but everything seemed to point to some inflammatory mischief in the cord itself or in the meninges, and the patient died rapidly of exhaustion without any amelioration of the nervous symptoms. On the patient dying, permission was given to open only the thorax and abdomen, when a cancer of the head of the pancreas was found, with many secondary nodules in the liver.

The case in whose cord I observed softenings had been in the asylum for many years; he was very demented, and the examination of his sensory disturbances was extremely difficult, so that a minute clinical examination of the condition under consideration was quite impossible. Herpes developed in the dorsal region at the level of the fifth rib on the right side, and extended forwards almost as far as the sternum. There was a slight degree of herpes in the distribution of the first and second divisions of the fifth cranial nerve; this nerve was found to be very gelatinous-looking and soft at post-mortem examination. In the case-book it was noted that there were choreiform movements affecting chiefly the jaws and arms, which lasted for three weeks previous to death.

As I anticipated finding some unusual lesion in this cord, I examined every segment by the usual methods available for the demonstration of atrophic, degenerative, and inflammatory lesions. The lesions were demonstrated by the methods of Marchi and Van Gieson, with hæmatoxylin and eosin and with safranin.

In the fifth lumbar segment there were two small foci, one at the posterior margin of the cord, in the immediate vicinity of the postero-median septum, and another of equal size in the left root entry zone, close to the posterior horn, and midway between the commissure and the margin of the cord (Photo I.). I met with no more of these foci until reaching the sixth dorsal segment, where, again, there were two; one was situated in the

right lateral basis bundle, the other in the left lateral basis bundle, but in position somewhat anterior to the first one. In the first dorsal segment there was a very small focus in the anterior basis bundle on the right side, just anterior to the lateral extension of the anterior grey horn; this was a very small focus indeed. The foci in the fifth lumbar segment were not followed by any secondary degeneration; it is obvious, therefore, they occurred very shortly before death.

In the fifth cervical segment two definite foci were seen; one, comparatively large, involving both sides of the middle third of the postero-median septum, another, very small, situated slightly to the left-hand side of the above-mentioned septum (Photo II.). Both gave rise to ascending degenerations, the larger one being shaped like a V, with the apex forwards, and a limb on either side of the posterior septum. These degenerated strands ultimately terminated in the nucleus gracilis of the medulla. The smaller one showed as a small oblique band, which passed backwards towards the postero-internal part of Goll's column on the left side, and was only traced as high as the second cervical segment. In the third cervical segment there were two moderately large myelitic foci, one in the anterior part of each cuneate fasciculus; both gave rise to well-marked ascending secondary degenerations, which were traced into the cuneate nucleus of the medulla on both sides (Photo III.). In addition to these foci in the posterior columns, there were two in the lateral columns, one small one in the second cervical segment, just about the junction of the two right spino-cerebellar tracts, and in the first cervical segment another, a little smaller, situated about the middle of the right posterior spino-cerebellar tract of Flechsig. The only other focus encountered was situated in the medulla, at the lateral margin of the left anterior pyramid, at the level of the inferior extremity of the lower olive.

The above description of those discrete myelitic foci applies only to my findings with the Marchi method; all, however, were examined by methods suitable for demonstrating the changes in the axis-cylinders, vessels, and connective tissues. The foci in question were compared with sections taken from a case of acute transverse myelitis which lived for six weeks after the onset of the attack, and in all the marked feature was the swelling of the



PHOTO I.

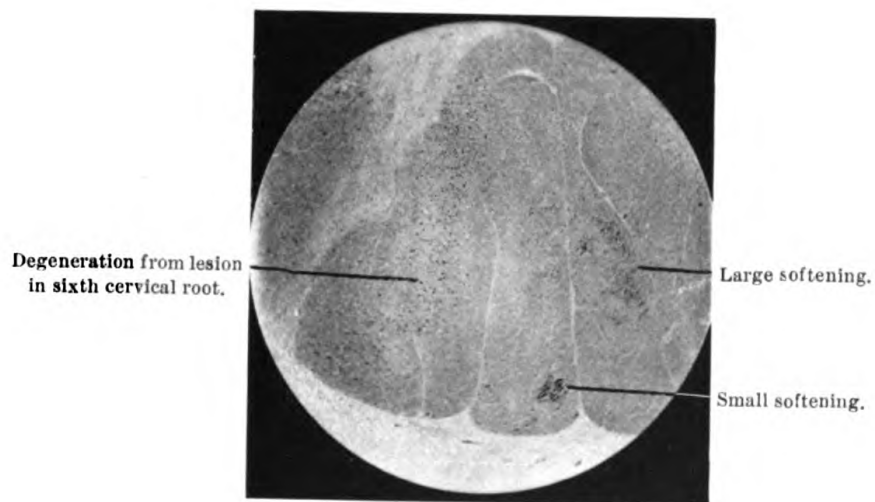


PHOTO II.—Fifth cervical segment.

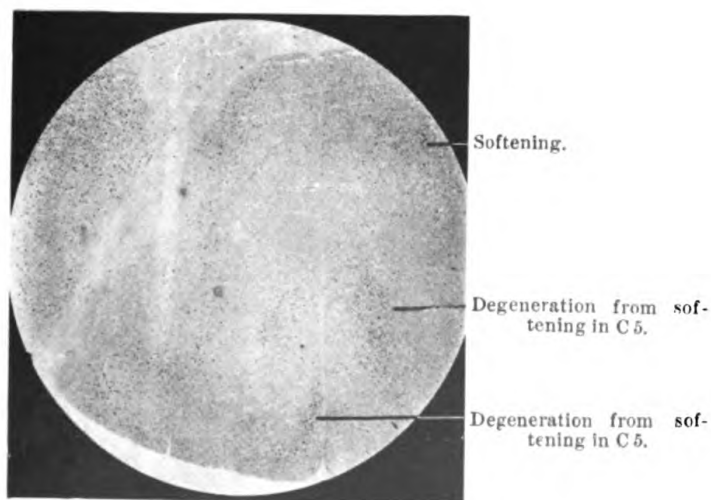


PHOTO III.—C3. Posterior columns.
To illustrate Dr Paul's Paper.

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PLATE 8.

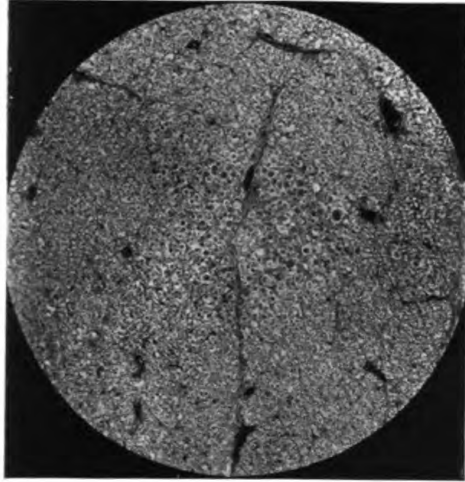


PHOTO IV.

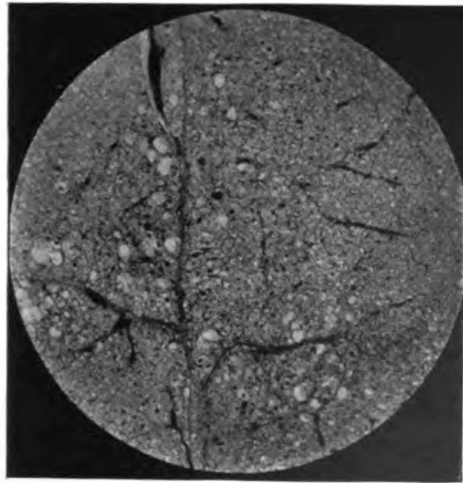


PHOTO V.

To illustrate Dr Paul's Paper.

axis-cylinders. This swelling varied in degree, some fibres being only slightly enlarged, while others were of enormous size, as may be seen in the accompanying photographs (Photos. IV. and V.). The less swollen axis-cylinders kept their shape fairly well, but the more swollen ones showed considerable variation in contour; some were oval, others pyriform, and others quite irregular. With safranin they stained a cherry-red colour. The majority of the axis-cylinders were preserved, and surrounded by a clear space, due, in some instances, to expansion, in others to a loss of the connective tissues. Some axis-cylinders, however, had undergone degeneration, and were represented only by a faintly staining amorphous mass of indistinct outline. There was little evidence of neuroglial proliferation, but here and there some thickening of the processes and enlargement of the cells was noted. The vessels showed a marked degree of hyaline thickening in the neighbourhood of the softened areas and elsewhere, and two of these softened areas were cut in serial section for evidence of thrombosis or embolus, but without success. It is reasonable to presume, however, that evidence of embolic or thrombotic change would be obliterated in the general tissue destruction.

On comparing these foci with sections from a case of acute myelitis, one found in the former a marked absence of cellular reaction, both hæmatogenous and histogenous. There were a few lymphocytes in the adventitial sheath of the vessels and only a very few compound granular corpuscles; as above mentioned, there was a slight degree of neuroglial reaction. The appearances suggested a tissue destruction or necrosis more than an inflammation. On the other hand, acute infective myelitis is characterised by a well-marked inflammatory reaction. The vessels are engorged, sometimes thrombosed, and their walls filled with migratory cells. The whole cord is infiltrated with leucocytes, the nerve fibres are necrosed, and the neuroglia cells are swollen and proliferated. A variable degree of meningitis is always present. The picture in a case of true myelitis, therefore, is so different from what is found in the foci under discussion as to strongly suggest that the latter are not inflammatory in nature. We have therefore to seek for some other explanation.

They must result, in all probability, from interference with the blood supply, due either to thrombi, emboli, or anæmia, the result of hyaline thickening of the vessel wall. In the case under

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discussion the latter hypothesis is the most unlikely, for there was evidence of a blood infection, shown by the presence of recent endocarditis, affecting the aortic valve. This may have been the result of bacterial infection of the degenerating cancer nodules. It is just possible that some minute vegetations were carried in the blood-stream up the vertebral arteries and thence into the spinal arteries. In confirmation of such a hypothesis we have the fact that the cervical region was affected far more profoundly than any other; on this point, however, one wishes to avoid dogmatism, and would refrain from giving any definite opinion until more cases of a similar nature are met with and examined.

LITERARY REFERENCES.

- (1) Nonne and Lenoble. Quoted in Cornil and Ranvier's text-book, "Manuel d'Histologie Pathologique."
- (2) Nikiforoff and Leyden. A synopsis of their work is given in the 2nd vol. of Jacobsohn, Minor, and Flatau.
- (3) Boycott and Damant. *Review of Pathology and Bacteriology*, April 1908.

UNILATERAL CROSSED EXTENSOR PLANTAR REFLEX

By LEONARD J. KIDD, M.D.

I AM able to add yet one more variety of the crossed plantar reflex to the seven enumerated by Dr A. W. Fairbanks in the May 1911 number of this *Review*. It resembles most closely his fourth variety—bilateral crossed extensor responses—which was first recorded by Dr Byrom Bramwell in October 1905 ("Clinical Studies," N.S., Vol. iv., Part i., p. 92). In my four cases, which curiously I saw within a period of six months about six years ago, there was present (1) bilateral direct plantar responses, with (2) unilateral crossed extensor response. All four cases were perfectly typical examples of the paraplegic form of disseminated sclerosis; all showed marked spasticity of the lower extremities; in one this was more marked on one side, and here the crossed extensor response was obtained on stimulation of the sole of the more spastic side; all showed the typically slow extension of the hallux; and, finally, in all the

crossed extension was likewise slow, but was slightly less in degree than that of the side stimulated. I need hardly add that I took the utmost care to exclude any fallacy arising from volitional movements on the part of the patient. My large experience of the plantar reflex, however, has taught me that volitional movements of the side not being stimulated are, even in highly nervous and apprehensive patients, very much rarer than on the stimulated side. Still, it is and will always be true that caution is needed by those who look for and record examples of crossed plantar reflexes. It will be noted that in the recorded examples of crossed extensor response, whether bilateral (B. Bramwell's) or unilateral (Kidd's), there has been evidence of involvement of the spinal portion of the pyramidal tracts.

My experience of the crossed plantar reflex has been peculiar in this, that, although I have for more than seven years been looking for examples thereof in a very large number of cases, I have never seen any but these four apparently exceptional cases of unilateral crossed extensor response. This fact shows how personal a matter any individual observer's experience may be in some respects. I have examined a rather large number of cases of pyramidal lesions in the dorsal decubitus position and legs in Collier's position, and have also seen several others do likewise: but, since some of the physicians whom I have seen at work have often tested the plantar reflex in such a way that both feet could not be simultaneously watched, it is evident that I may thus have missed a good many examples of the commoner types of crossed plantar reflex.

In conclusion, I should like to offer for the consideration of clinical workers the following suggestions and questions, some of which may possibly help us to a better study of these interesting varieties:—

- A. Since our knowledge of the crossed plantar reflex is, at the outside, barely a decade old—Dr Byrom Bramwell demonstrated his first case in September 1901 at Edinburgh—it is essential that in future all observers should use dorsal decubitus and Collier's position in testing the plantar reflex, even in out-patient room or consulting room. It is only by observance of this golden rule that we can hope to

learn the frequency of the crossed plantar reflex and also the relative frequency, and characteristics of, its particular varieties.

- B.* In the bilateral crossed extensor variety is the crossed response equal in degree on the two sides, and is it characteristically slow?
- C.* (1) In the unilateral crossed extensor variety is my present experience that of others, viz., is the crossed extensor response slightly less in degree than the direct extensor response?
- (2) Is the extension characteristically slow as in all my four cases?
- (3) Is crossed extensor response ever obtained by stimulation of the sole of the less spastic side, in cases that show unequal degree of spasticity on the two sides?
- (4) Is a crossed extensor response ever found without clinical evidence of involvement of the spinal portion of the pyramidal tracts?

It seems that at present no one has succeeded in inventing an altogether satisfactory nomenclature in describing these eight varieties of crossed plantar reflex. Since we can afford to leave out of account No. 1 of Dr Fairbanks' category, we may use such terms as unilateral crossed flexor, bilateral crossed flexor, unilateral crossed extensor, bilateral crossed extensor, without much risk of being misunderstood by those who are familiar with the literature of the subject.

Abstracts

ANATOMY.

THE CORTICO-SPINAL TRACT OF THE RAT. JESSIE KING,
(291) *Anat. Rec.*, Vol. iv., No. 7, July 1910.

THE author removed the cerebro-motor cortex on one side in eight rats. They were killed ten to fourteen days later, and the brain and spinal cord examined by the Marchi method. The fibres of the pyramidal tract were traced downwards until they reached the

level of a group of cells representing, probably, the inferior olivary nucleus, where the decussation occurs. The pyramidal tract fibres then pass backwards through the grey matter into the posterior columns of the opposite side, where they occupy an area at the apex of the column of Burdach. The decussation is complete. The author points out that the above results support the view of Schäfer and von Monakow that these fibres end in relation to nerve cells situated in the posterior horn, and that the functional connection with the large multipolar cells of the anterior horn is established through an intermediate neurone.

A. NINIAN BRUCE.

**THE RELATIONS OF THE MAIN DIVISIONS OF THE TRI-
(292) FACIAL NERVE.** J. SYMINGTON, *Journ. of Anat. and Physiol.*,
Vol. xlv., p. 183.

THE anatomical relations of the roots of the fifth nerve have assumed a new importance to the physician in view of the introduction of deep alcoholic injections in the treatment of trifacial neuralgia. The operation is one which should only be attempted after a careful study of the parts concerned. This will be greatly facilitated by the present paper, in which Symington figures two coronal sections through an adult female head with the soft parts *in situ*. The first section passes through the posterior part of the orbit and sphenomaxillary fossa, the point at which injection of the frontal and maxillary nerves is attempted, while the second passes through the foramen ovale at and below which the mandibular nerve is depicted. The structures which the needle traverses, the anatomical guides, and the structures which may be damaged in its transit, are clearly demonstrated in the two coronal sections and in a lateral view of the head reconstructed from a series of the same.

EDWIN BRAMWELL.

**A SHORT PRELIMINARY NOTE ON THE DISTRIBUTION OF
(293) THE NERVE-FIBRES OF THE DENTAL PULP.** J. H.
MUMMERY, *Proc. Roy. Soc. of Med.*, April 1911, Odont. Sect.,
p. 51.

IRON and tannin stained specimens appear to show that non-medullated fibrils do pass into the dentine tubules, but no light is thrown on their termination in the hard tissue.

J. H. HARVEY PIRIE.

PHYSIOLOGY.

ON THE FUNCTION OF THE POST-CENTRAL CEREBRAL (294) CONVOLUTIONS. FRANZ, *Journ. Comp. Neurol.*, Vol. xxi., No. 1, March 1911, p. 115.

THIS is an account of a case of a woman who, at the age of thirteen, was struck on the left side of the head by a bullet. She did not lose consciousness, although stunned for a time. Nine days later she had convulsions for about twenty-four hours. No more attacks were observed for seven years, when she married, and they began again, gradually increasing in severity and number. The only alterations to be found consisted of an increased sensibility to touch in the arm, shoulder, chest, and upper part of the back. On trephining, a cyst was found which was located behind the fissure of Rolando and close to the motor area for the arm and shoulder, and it was concluded that the sensory change in the arm and shoulder were due to the effects of the pressure of the cyst. The patient made a good recovery from the operation, and a decreased sensibility in the above segments was then found, which, however, was not permanent. The improvement following the operation did not last, the convulsions again recurred, and conditions of dementia set in. The author considers that this case confirms the results of Cushing and others that the post-central convolutions are sensory in function, and that they are the receiving station for the afferent impulses from the skin.

A. NINIAN BRUCE.

ON THE NEUROTONIC ELECTRICAL REACTION. J. HANDELS- (295) MAN, *Neurol. Centralbl.* 1911, N. 8.

NEUROTONIC electrical reaction (NeR) consists in this, that by the irritation of a nerve with an electric current (faradic and galvanic) we get a tetanic contracture of corresponding muscles; this contracture persists from a few seconds to about fifteen seconds and longer. But on irritation of the muscles themselves the tetanic contracture does not appear.

Neurotonic reaction has been described, in 1896, by Marina (in the radial nerve) and Remak (in the median and ulnar nerves). There are also some authors who have described this reaction as being associated with myotonic symptoms. The author describes a case of syringomyelia; in both upper limbs he found a neurotonic reaction from the median nerve, and in both the lower limbs NeR (in the popliteal nerve), together with myotonic symptoms (in the gastrocnemius muscle). He therefore suggests that both

these variations of an electrical reaction, from the nerve and the muscle, perhaps only have been different steps of increased excitability of the peripheral motor neuron, including the muscle.

AUTHOR'S ABSTRACT.

ON THE TIME RELATIONS OF THE KNEE-JERK AND SIMPLE
(296) **REFLEXES.** W. A. JOLLY, *Quart. Journ. of Exper. Physiol.*,
Vol. iv., No. 1, p. 67, 1911.

THE time of the knee-jerk has been recorded in the rabbit, intact and decerebrate; the decapitate cat preparation within a few hours of decapitation; the "spinal" cat which has been kept alive for three weeks after transection of the cord in the dorsal region, and on man.

This latent period is compared with the latent periods of the reflex movements of the hind limb. For this purpose the time relations of the homonymous flexion reflex and the heteronymous extension reflex have been recorded in the spinal cat.

The method used for determining commencement of activity in the muscles is to record the electrical variation accompanying activity by means of Einthoven's String Galvanometer. Stimulation is applied by the blow of a hammer falling, in the case of the knee-jerk, upon a vulcanite plate attached to the patellar tendon, and in the case of the other reflexes, upon a plate bearing needle points on the lower surface and lying upon the skin.

The time which elapses between stimulation and the electrical response of the muscle in a spinal reflex consists of the sum of the following periods:—

1. The latent period of the afferent nerve endings.
2. The time of conduction in afferent and efferent nerves.
3. The latent period of the electrical change in the muscle to stimulation through its motor nerve, and
4. The time occupied in the spinal cord—in other words, the delay at the synapse or synapses.

For the measurement of the delay at the sensory endings the following method has been used:—The anterior crural nerve is exposed and cut in the abdomen, and non-polarisable electrodes are applied to the peripheral end. A negative electrical variation is recorded from the nerve when the skin is stimulated or the patellar tendon struck. The nerve is dissected out and conduction time deducted from the latent period of the electrical variation. The remaining period is regarded as the latency of the afferent nerve endings.

Nerve conduction time is calculated, in accordance with Piper's results, at 120 metres per second.

The latent period of the action current of the muscle is determined by direct mechanical stimulation of the motor nerve.

The comparison between the synapse times of knee-jerk and flexion reflex in the spinal cat works out as follows :—

Latency of knee-jerk	5·5 thousandths of a second.
Afferent endings	0·5
Conduction time	1·4
Motor endings	1·5
	<hr/> 3·4
Synapse time of knee-jerk	<hr/> 2·1
Latency of flexion reflex	10·6 thousandths of a second.
Afferent endings	2·8
Conduction time	2·
Motor endings	1·5
	<hr/> 6·3
Synapse time of flexion reflex	<hr/> 4·3

The synapse time of the knee-jerk in the spinal cat is thus about two-thousandths of a second, of the homonymous flexion reflex about four-thousandths.

The latency of the heteronymous extension reflex is about one-thousandth of a second longer than that of the homonymous reflex.

The relation between the synapse times suggests that the knee-jerk mechanism involves one spinal synapse or set of synapses, while the flexion reflex involves two. AUTHOR'S ABSTRACT.

THE SITE OF ACTION OF STRYCHNINE IN THE SPINAL
(297) CORD. RYAN and M'GUIGAN, *Journ. Pharmacol.*, March 1911,
Vol. ii., p. 319.

THE work of Baglioni and others has shown that, in the frog, strychnine increases the irritability of the sensory cells in the spinal cord. In one series of experiments the authors have found that strychnine acts similarly in mammals. In a second series of experiments on mammals, they have endeavoured to ascertain whether strychnine affects the irritability also of the motor cells of the cord. Having found an increased irritability of the motor cells, as tested by their sensitiveness to cortical stimulation, they incline to the opinion that strychnine increases the irritability of the motor, as well as of the sensory, cells of the spinal cord.

J. A. GUNN.

THE SENSIBILITY OF THE ALIMENTARY CANAL IN
(298) **HEALTH AND DISEASE.** A. F. HERTZ, *Lancet*, April 22,
p. 1051 ; April 29, p. 1119 ; and May 6, p. 1187.

THE following are the author's conclusions:—

1. The mucous membrane of the alimentary canal from the upper end of the œsophagus to the junction of the rectum with the anal canal is insensitive to tactile stimulation.

2. The mucous membrane of the œsophagus and the anal canal is sensitive to thermal stimulation, but that of the stomach and intestines is insensitive.

3. The mucous membrane of the œsophagus and stomach is insensitive to stimulation by dilute hydrochloric acid and dilute organic acids, and the rectum, but not the anal canal, is insensitive to stimulation by glycerine. Contact of alcohol with the mucous membrane of all parts of the alimentary canal gives rise to a sensation of heat.

4. The surface of gastric and intestinal ulcers is no more sensitive to tactile, thermal, and chemical stimulation than the intact mucous membrane.

5. The sensation of fulness in the alimentary canal is due to a slow increase in the tension exerted on the fibres of its muscular coat ; the adequate tension is constant for each segment, but the volume of contents necessary to produce this tension varies with the tone of the muscle-fibres.

6. The sense of fulness in the rectum has a special character, by virtue of which it produces the call to defæcation.

7. Hunger consists in a general sensation of malaise and weakness in the body as a whole and a local sensation of emptiness in the abdomen. The latter is due to the periodical motor activity of the stomach and intestines during fasting, when the sensory nerves are in a condition of hyper-excitability.

8. The only immediate cause of true visceral pain is tension ; this is exerted on the muscular coat of hollow organs and on the fibrous capsule of solid organs. The sensation of pain in the alimentary canal is due to a more rapid or greater increase in tension on the fibres of its muscular coat than that which constitutes the adequate stimulus for the sensation of fulness.

9. Pain in diseases of the alimentary canal is most frequently true visceral pain ; it is sometimes due to spread of the disease to surrounding sensitive structures or to tension exerted on the peritoneal connections ; and, lastly, it may be situated in the skin, muscles, and connective tissues, to which it is referred from the segment of the central nervous system, which receives the afferent nerves from the affected organ.

10. Tenderness in diseases of the alimentary canal is most frequently due to hyperalgesia of the skin, voluntary muscles, and connective tissues supplied by the segment of the central nervous system, which receives the afferent nerves from the affected organ. It may also be due to increase in tension within the organ produced by the external pressure giving rise to the adequate stimulus of visceral pain; this is rare in the stomach, but comparatively common in spasmodic conditions of the colon and in appendicitis. Lastly, it may be due to the spread of the disease to the parietal peritoneum.

11. Visceral sensibility is exaggerated by training in hypochondriasis, and visceral and referred sensations are exaggerated by the irritable condition of the central nervous system in neurasthenia and anæmia.

J. H. HARVEY PIRIE.

PATHOLOGY.

CONTRIBUTION TO THE ANATOMY AND PATHOGENY OF SO-CALLED AGENESIS OF THE CORPUS CALLOSUM. LASALLE (299) ARCHAMBAULT, *Nouv. Icon. de la Salpêtrière*, Sept.-Oct. and Nov.-Dec. 1910.

THE following are the conclusions of this long and painstaking study of a difficult subject:—

(1) In cases of so-called agenesis of the corpus callosum it is only the callosal commissure, strictly so-called, that is wanting.

(2) In many cases a foetal ventricular meningitis is the cause of the anomaly: this either destroys the periventricular callosal layer or provokes ventricular closure, and so mechanically prevents the callosal commissure from developing.

(3) The occipito-frontal bundle is simply a heterotopia of the corpus callosum and is not found in normal brains.

(4) The cerebral trigone is formed not merely by fibres coming direct from the hippocampal gyrus, but also by fibres from the first limbic convolution which reach it by crossing the corpus callosum.

(5) The internal sagittal layer of the fronto-parietal lobe (the reticular zone of Sachs) represents the corona radiata of the first limbic convolution.

(6) The anterior commissure probably enters into the constitution of the temporal part of the tapetum; apart from this possibility the latter is formed exclusively by fibres of the corpus callosum.

S. A. K. WILSON.

EPENDYMAL AND SUB-EPENDYMAL LESIONS IN DIS-
(300) **SEMINATED SCLEROSIS.** (Lésions épendymaires et sous-
épendymaires dans la sclérose en plaques.) MERLE and
PASTINE, *Nouv. Icon. de la Salpêtrière*, Nov.-Dec. 1910, p. 613.

IN a highly typical case of disseminated sclerosis the authors found that the dominant pathological feature was the peri-ependymal site of the great majority of the sclerosed plaques. The examination and description of the pathological changes are very complete, and the case is valuable as suggesting that irritation of the ventricular walls is to be considered a not uncommon feature of the disease, and probably of much pathogenic significance. References are given to other recent cases in which ependymal and sub-ependymal changes have been found. S. A. K. WILSON.

NOTES ON SOME VICTIMS OF A RECENT RAILWAY ACCI-
(301) **DENT, WITH SPECIAL REFERENCE TO CEREBRAL FAT**
EMBOLISM. GODLEE and WILLIAMS, *Lancet*, April 22, 1911,
p. 1062.

THE paper deals with nineteen cases of more or less severe injuries, mostly fractures of the lower extremities, caused by a railway accident in which two carriages were telescoped, admitted to University College Hospital. Of the four fatal cases, three probably had fat embolism. On two autopsies were made. Both were fractures of the thigh—one uncomplicated, the other associated with crushing of the knees. Chloroform was used. They became comatose in about twelve hours without marked previous pulmonary distress. The temperature was raised, the pulse was rapid and of low tension, and there were no localising cerebral symptoms. One was trephined because there was evidence of some injury to the head, but the operation had no influence on the symptoms. The other recovered partially from what appeared to be a hopeless condition, and died of a secondary broncho-pneumonia. The fat embolism was clearly demonstrated post-mortem. Attention is drawn to (1) the difficulty of explaining why fat embolism follows some injuries in which its occurrence would appear unlikely; (2) the fact that though the cerebral symptoms were marked pulmonary symptoms were slight or absent; and (3) the superficial resemblance between the symptoms and those of cerebral compression. In conclusion, a comparison is drawn between the symptoms and those recorded by other observers.

AUTHORS' ABSTRACT.

CLINICAL NEUROLOGY.

HOW IS CONTRACTURE TO BE DEFINED? (*Comment devons-nous (302) nous définir la contracture?*) NOÏCA, *Revue neurologique*, Feb. 28, 1911, p. 218.

ACCORDING to Blocq, "spasmodic contracture" is to be distinguished from "pseudo-contracture." The former is characterised by—"Its peculiar feeling of elasticity, its localisation to groups of muscles functionally associated, its tendency to generalisation, its connection with exaggeration of the reflexes, its disappearance during chloroform anaesthesia." In this group may be placed the contractures of hemiplegia and paraplegia, contracture of articular origin and hysterical contracture. The latter, which includes the contractures of paralysis agitans, of myopathy, and of ischaemia, is characterised by—"The peculiar stiff feeling of the muscles on palpation, its irregular distribution, the absence of any tendency to generalisation, the non-exaggeration of the reflexes, its unchanging continuance during chloroform anaesthesia." In this second group there are material modifications in the muscle fibres which are absent in the first.

According to Noïca, the word "contracture" ought to be applied solely to muscular stiffness consecutive to disturbance of the function of the pyramidal system, and he would thus define it: "Contracture is an involuntary, permanent, muscular stiffness or rigidity, which disappears on the application of an Esmarch's bandage to the root of the affected limb, and which puts the limb into an attitude that reproduces the form of the strongest co-ordinated movement of that limb." Thus the only true contracture of the lower limb would be one of extension; if the limb be flexed in contracture, then the latter is a pseudo-contracture due to tendinous retractions, etc. In the upper arm, true flexion contracture is common; true extension contracture is rare.

S. A. K. WILSON.

A CASE OF MYASTHENIA GRAVIS, ETC. (*Un cas de myasthénie (303) grave progressive d'Erb-Goldflam: étude anatomo-clinique avec présentation de coupes histologiques.*) ROUSSY and ROSSI, *Revue neurologique*, Feb. 15, 1911, p. 149.

CLINICALLY this case was unusual in that the patient's age was only ten years, and the total duration of the illness nine months. Pathologically the following points are specially mentioned by the authors: the thymus was persistent but of normal structure. The thyroid was in a condition of hyper-activity, the pituitary and

suprarenals were congested. The central and peripheral nervous systems were intact, except that in the cord the ependymal canal was dilated, and at the level of the aqueduct of Sylvius definite ependymitis was present. The chief pathological feature was the changes in the muscles, mainly but not entirely interstitial. These consisted in cellular infiltrations, irregular in degree but very widespread. The type of cell was mainly lymphocytic. Parenchymatous alterations consisted of some muscle fibre atrophy, especially in the tongue and biceps; moniliform fibres; fatty degeneration of fibres. In some places transverse striation was obliterated.

The authors incline to the view which places myasthenia gravis among the "myopathies" rather than the "neuropathies."

S. A. K. WILSON.

RECKLINGHAUSEN'S DISEASE AND PERIODIC PSYCHOSIS.

(304) (*Maladie de Recklinghausen et psychose périodique.*) J. CHARPENTIER, *L'Encéphale*, 1910, v., p. 460.

A MAN, aged 57, whose father was alcoholic and two sisters insane, and who was himself suffering from manic-depressive insanity, showed the condition of pigmentary dermo-fibromatosis. Molluscous tumours and pigmentation were found, but no nerve tumours. Charpentier regards the psychosis as an equivalent for the nerve tumours, the skin lesions and the psychosis being both signs of degeneracy. Though Recklinghausen's disease is rare in the insane, some degree of mental disturbance is frequent in that condition. Thus, out of 47 cases of von Recklinghausen's disease in which mention was made of the mental state, 31, or 65 per cent., showed some psychical defect symptomatic of degeneracy, such as apathy, intellectual obtuseness, or melancholic tendencies.

J. D. ROLLESTON.

EARLY JUVENILE TABES AND INFANTILE PARALYSIS.

(305) (*Tabes juvenile précoce, rebelle au traitement et à marche rapide chez un adolescent ayant eu une paralysie infantile.*) V. CORDIER, *Lyon méd.*, 1911, cxvi., p. 18.

A MAN, aged 25, who had so far recovered from infantile paralysis as to be able to walk almost normally, contracted syphilis in September 1908. In spite of intensive treatment the attack was severe. In December 1909, sixteen months after infection, bladder troubles developed, but the knee jerks and pupils were still normal. In February 1910 tabes had fully developed, for in

addition to bladder troubles the patient had Rombergism, inco-ordination of lower limbs, loss of knee jerks, Argyll-Robertson pupils, and anisocoria. Cordier thinks that the rapid development of tabes was due to the old attack of infantile paralysis.

J. D. ROLLESTON.

A SKIN ERUPTION IN SIX CONSECUTIVE CASES OF POLIO-(306) MYELITIS. A. G. BROWN, *Pediatrics*, April 1911, p. 229.

THIS eruption appeared in six consecutive cases of poliomyelitis at the Sick Children's Hospital, Toronto, in a period of one and a half weeks, and followed the same course in each. The character of the rash was fairly uniform, and its distribution varied little. It appeared as a small shotty papule, with a tiny inflammatory base, and might or might not go on to vesiculation. If it did the vesicles resembled a small chicken pock, containing clear fluid. The vesicle also was hard, and at that stage had no inflammatory base. The rash might be present in all its stages on the same patient. As regards distribution, it was rather indefinite, but in all cases it was present, and most abundant on the paralysed limbs, sometimes also scattered sparsely over the unaffected abdomen and chest, and occasionally on an unaffected upper limb. The rash did not appear to follow any nerve distribution, and there was no pain on touching. Sections through the vesicles showed them to be more superficial than was suggested from palpation, as they lay between the malpighian and corneous layers of the skin.

J. H. HARVEY PIRIE.

RECURRENT ANTERIOR POLIOMYELITIS. (Poliomyélite antérieure à rechute: rôle possible d'un traumatisme antérieur.) (307) OULMONT and BAUDOUIN, *Revue neurologique*, March 30, 1911, p. 333.

AN account of a somewhat curious case in which the symptoms of a subacute poliomyelitis affecting more particularly the upper extremities appeared about one month after the patient, a man of sixty, had a bad accident from a fall. Recovery took place after about three months, and the patient resumed work, but about a year later the same symptoms reappeared as had been noted in the first attack, and after a few days proved fatal by spreading to the medulla. Post-mortem the main pathological lesions were in the cells of the anterior horns and in the muscles. The authors refer to the well-known experiments of Schmaus on rabbits (*Deutsche Zeitschrift für Nervenheilkunde*, Bd. xxvi.) in connection with the etiology of this case.

S. A. K. WILSON.

THE LESIONS OF EPIDEMIC POLIOMYELITIS. (Les lésions de (308) la poliomyélite épidémique.) M. and MME. TINEL, *L'Encéphale*, Feb. 10, 1911, p. 127.

THIS is the account of the pathological examination of a case of poliomyelitis from the recent French epidemic. The clinical history has been already published by Netter (*Soc. med. des Hôpitaux*, November 19, 1909). In addition, a comparison is drawn with the lesions in the cords of a dozen monkeys inoculated with the virus by Levaditi.

The following are the chief points in the examination:—

A meningeal reaction was present only in the lumbar region, especially on the anterior aspect of the cord. Throughout the whole cord marked proliferation of the perivascular sheaths was observed, the result being the formation of layers of embryonic cells: these layers were more dense as one passed in from the periphery to the centre of the anterior horn; in other words, the reaction was more intense where the inflammation was more severe.

In the grey matter destructive lesions of the nerve cells were coupled with interstitial changes, but the two groups were not parallel; at some points the destruction of nerve cells was considerable while the interstitial changes were minimal. On the other hand, the latter seemed to extend after the disappearance of the nerve cells was complete. Hence it may be assumed that the initial and essential lesion of epidemic poliomyelitis is this constant and intense alteration of the nervous parenchyma. The lesions do not depend on vascular changes, nor do they correspond to any given vascular distribution. The nerve cells disappear either by direct histolysis or by the process of neuronophagy.

The author found identical lesions and an identical series of consecutive changes in the experimental cords of apes inoculated with virus from the Viennese epidemic. S. A. K. WILSON.

TREATMENT OF POLIOMYELITIS BY MUSCULO-TENDINOUS (309) GRAFTS, ETC. (Traitement de la paralysie infantile par les greffes musculo-tendineuses: remarques anatomiques concernant les plexus et expliquant le mécanisme de la poliomyélite antérieure.) MENCIAIRE, *L'Encéphale*, Jan. 10, 1911, p. 47.

THE following are the author's conclusions:—

(1) Of two muscles innervated by the same nerve one may be affected in poliomyelitis and the other unaffected. This fact justifies the technique of supplementing a paralysed by a

non-paralysed muscle, even though the latter has the same innervation.

(2) The chances are that two muscles in the same segment of a limb, innervated from different sources, are not likely to be involved at one and the same time. Thus the biceps cruris is not often affected while the quadriceps often is.

(3) There cannot be, in the cord, one nucleus for the extensors, one for the adductors, and so on. Otherwise it would be much more common to find the whole of one of these groups affected than it actually is. We must admit a separate nucleus for each muscle.

(4) Foci of poliomyelitis are usually multiple and irregularly disseminated.

S. A. K. WILSON.

PROTECTIVE INOCULATION IN ACUTE POLIOMYELITIS.

(310) (*Exper. Beiträge zur Frage der Schutzimpfung bei Poliomyelitis acuta.*) R. KRAUS, *Zt. f. Immunitätsforsch.*, Bd. 9, No. 2, S. 117.

THE virus of poliomyelitis (saline emulsion of brain and cord of macacus rhesus) when treated for five days with 1-1½ per cent. carbolic is no longer infectious (for macacus) on subcutaneous injection.

Ten c.c. of virus thus sterilised injected subcutaneously protects macacus against a subsequent subdural infection. The virus can be killed in vitro by the serum of a sheep treated with virus, but this viricidal serum does not confer even preventive protection. This is analogous with rabies virus. Serum therapy in poliomyelitis is not very promising—prophylactic inoculation with carbolised virus seems at present to offer better results.

J. H. HARVEY PIRIE.

THE VALUE OF LUMBAR PUNCTURE AND OF THE LEUKO-

(311) CYTE COUNT IN THE DIAGNOSIS OF ACUTE POLIOMYELO-ENCEPHALITIS (INFANTILE PARALYSIS). J. L. MORSE, *Arch. of Pediat.*, March 1911, p. 164.

SEVEN cases, examined after the stage of the appearance of paralysis, gave a clear fluid, usually under increased pressure, often showing a fibrin clot, and always containing an excess of cells, chiefly mononuclears, and most of these lymphocytes. The blood of nine cases, examined after the onset of paralysis, always showed a moderate or marked leukocytosis.

J. H. HARVEY PIRIE.

**THE SUDDEN ONSET OF PARALYSIS IN POTT'S DISEASE,
(312) WITHOUT DEFORMITY OF THE VERTEBRÆ. CAD-
WALADER, *Amer. Journ. Med. Sc.*, April 1911, p. 546.**

THE paper records three cases which came to autopsy within a comparatively short time after the onset of paralysis, and one case in which the condition was seen at operation, where myelitis was caused by spinal caries without any previous deformity of the vertebræ. In one of these cases no disease of the bones of the spinal column was discovered. In all the condition was more of the nature of a pachymeningitis externa than a tubercular abscess pressing on the cord.

The author considers that in the majority of cases of paralysis from Pott's disease, infection "extends from the bodies of the vertebræ to the external, lateral, and posterior surface of the dura, setting up a chronic inflammation, which produces great thickening with epidural exudation and fungoid proliferations." In addition there is usually thickening in the walls of the vessels of the cord, which may lead to thrombosis and myelitis.

Infection of the dura is almost always due to direct extension from a focus in one of the vertebræ, but may occur without any previous vertebral disease.

The process may be due to pressure causing thrombosis, or to thrombotic myelitis from the thickened vessels, as most cases show more degeneration in the centre than in the periphery of the cord. In some cases large cavities may be found in the region of the central canal, and the case may simulate syringomyelia.

Fickler has found the causes of paralysis from Pott's disease to be in 9 per cent. of cases compression by dislocation of a vertebra; in 17 per cent. abscess formation; and in 73 per cent. pachymeningitis externa.

J. GODWIN GREENFIELD.

**AN UNUSUAL CASE OF FRACTURE OF THE BODIES OF THE
(313) FOURTH, FIFTH, AND SIXTH CERVICAL VERTEBRÆ,
WITH INJURY OF THE SPINAL CORD. SWAN, POWERS
and PERSHING, *Medical Record*, April 15, 1911, p. 664.**

THE case is published of a man who sustained a paraplegia from a fracture of the bodies of the fourth, fifth and sixth cervical vertebræ as a result of a fall from his horse. The autopsy showed that the vertebral bodies had been crushed, but there was no displacement of vertebræ. A small exostosis projecting from the junction of the bodies of the fifth and sixth cervical

vertebræ had produced a groove in the cord, but seemed only partially responsible for the damage caused.

Nothing of particular neurological interest is recorded in the case.
J. GODWIN GREENFIELD.

NEURASTHENIA IN CHILDREN. CLIVE RIVIERE, *Pediatrics*, (314) March 1911, p. 129.

NEURASTHENIA, an "irritable weakness" of the nervous system, is most readily produced in children of the type spoken of as "nervous" or "neurotic," which type is born, not made. Such children are unduly prodigal of their nervous energy, and such causes as domestic mismanagement, overwork, lack of sleep, or over-use of emotional or imaginative faculties, readily leads them to nervous bankruptcy. Such neurotic children may be not only potentially but often actually to a great extent neurasthenic, not only in the better-known form occurring at or about puberty, but, in varying degrees, at all ages.

In young children such cases may come of a well-to-do neurotic stock, or they may be "poverty-starved" neurasthenics. Carbohydrate dyspepsia is a common association.

To protect neurotic children they should lead as vegetable a life as possible in infancy, and the thorough education of the masticatory instinct is most necessary. In the better classes overstuffing with food, even against strenuous rebellion on the part of the child's digestive organs, is often responsible in bringing about a neurasthenic condition.

In older children the author follows the etiological grouping of Savile: (1) Toxic, (2) malnutrition, (3) fatigue, (4) shock and traumatism. The causation is often mixed, but most cases in children fall into group 3—over-pressure, actual or relative, in a neurotic subject, frequently combined with deficient sleep. The treatment resolves itself into the removal of the cause. In most cases a quiet country life, abundant fresh air, cold bathing, long hours in bed, and avoidance of over-pressure on the digestive organs will complete a cure.
J. H. HARVEY PIRIE.

RELATIONS BETWEEN THE THYROID AND PITUITARY (315) GLANDS. SUTHERLAND SIMPSON and ANDREW HUNTER,

Proc. of Soc. for Exp. Biol. and Med., 1909, Vol. vii., pp. 11-12.

THE POSSIBLE VICARIOUS RELATIONSHIP BETWEEN THE (316) PITUITARY AND THYROID GLANDS. SUTHERLAND SIMPSON and ANDREW HUNTER, *Quart. Journ. of Exper. Physiol.*, 1910, Vol. iii., No. 2, p. 121.

DOES THE PITUITARY BODY COMPENSATE FOR THYROID

(317) **INSUFFICIENCY?** SUTHERLAND SIMPSON and ANDREW HUNTER, *Proc. of Soc. for Exp. Biol. and Med.*, 1910, Vol. viii., No. 1, pp. 5-6.

THE normal thyroid gland has been found by Baumann to contain iodine, and although the exact significance of this is somewhat doubtful, it has been considered by Reid Hunt that the amount of iodine present in the thyroid gland may be taken as a measure of its physiological activity. It has also been found by Baumann, Halliburton, and others that iodine is not present in the pituitary body. Herring has shown that thyroidectomy is followed by definite histological changes in the pituitary. In view of a possible vicarious relationship between the thyroid and the pituitary glands, the above papers were undertaken with the object of determining whether thyroidectomy in animals is followed by the appearance or increase of iodine in the pituitary. The animals used were sheep, and the thyroid gland, together with the two internal parathyroid glands, were removed under local anaesthesia. The two external parathyroid glands were left behind, presumably uninjured. To make sure that iodine was being injected, some of the animals were given half a gram of sodium iodide daily mixed with their food. No marked symptoms followed the operation, and the animals lived for a period of from five to six months. They consider that their experiments prove conclusively that no iodine appears in the pituitary of the sheep after complete removal of the thyroid gland, and assuming that the iodine-containing body is the physiologically active constituent of the thyroid gland, it would appear that the pituitary does not compensate for thyroid insufficiency.

A. NINIAN BRUCE.

A METHOD FOR THE DETERMINATION OF SMALL QUAN-

(318) **TITIES OF IODINE IN ORGANIC MATERIAL.** ANDREW HUNTER, *Proc. of Soc. for Exp. Biol. and Med.*, 1909, vii., pp. 10, 11.

THE DETERMINATION OF SMALL QUANTITIES OF IODINE,

(319) **WITH SPECIAL REFERENCE TO THE IODINE CONTENT OF THE THYROID GLAND.** ANDREW HUNTER, *Journ. of Biolog. Chem.*, Vol. vii., No. 5, May 1910.

THE estimation of iodine in the thyroid gland is usually carried out by the method of Baumann, or one of its modifications. This method consists in converting the iodine into an alkaline iodide,

from which the iodine is liberated and estimated by colorimetry. The accuracy of the method is, however, somewhat uncertain, and it is claimed that the following method is not only more accurate, but also more rapid and more convenient to carry out, and may be used for the determination of iodine, whether free or as iodide or iodate. The material is oxidised with a mixture of potassium nitrate and potassium sodium carbonate, and the acidified solution of the product is then treated with excess of chlorine. The iodine is quantitatively converted into iodic acid. After the excess of chlorine is removed, the addition of potassium iodide leads to the liberation of exactly six times the original amount of iodine, and the iodine thus set free is titrated directly with a sodium thio-sulphate solution. It is claimed that this method will detect and approximately measure as little as 0.01 mgm., and the experimental error for 1 mgm. of "original" iodine is only 1 per cent.

A. NINIAN BRUCE.

ACCESSORY THYROID TISSUE WITHIN THE PERICARDIUM

(320) **OF THE DOG.** SWARTS and THOMPSON, *Journ. of Med. Research*, April 1911, Vol. xxiv., No. 2, p. 299.

THE authors have investigated the pericardial sac for accessory thyroid tissue in thirty dogs, and found it present in twenty-four, as many as seven nodules being found in the pericardial sac of one animal. These pericardial accessory thyroid glands are usually related to the ascending portion of the aorta, are mostly sessile, but may be pedunculate and show a typical thyroid structure microscopically. In two colloid goitre dogs the pericardial thyroids were found to be normal in structure. They consider that the occurrence of thyroid tissue in the pericardial sac is readily explained by the proximity of the points of origin and early development of the thyroids and of the arch and ascending portion of the aorta, and the subsequent migration of the heart into the pericardial sac. They failed to find thyroid tissue within the pericardium in a limited number of cases in man.

A. NINIAN BRUCE.

ON "IODBASEDOW" SYMPTOMS. J. GOLDFLAM, *Neurologja polska*, (321) 1911, Vol. i., N. 5.

IN his paper the author briefly describes the symptoms of so-called "iodbasedow," which were explained by T. Kocher. They consist in this, that in some cases patients who had never had Graves'

disease, and whose thyroid glands had been either slightly swollen or quite normal, yet exhibited all the symptoms of Graves' disease—hyperthyroidism—after using preparations of iodine. This is caused by the thyroid absorbing an excessive amount of the iodine. All the symptoms usually disappear after the iodine treatment is stopped. Goldflam describes two cases in which the symptoms of Graves' disease had developed after injections of 25 per cent. iodipin. The first patient, a woman, twenty-four years of age, with symptoms of a brain tumour (or meningitis serosa?), after seven weeks' continuous treatment with iodipin (186·0 c.c.), developed symptoms of Basedow's disease, viz., acceleration of the pulse, enlargement of the thyroid, and tremor of the hands. The second patient, a man, thirty-one years of age, had syphilis fourteen years previously. For one year and a half he has had typical tabetic pains in the limbs, Argyll-Robertson sign, and some disturbances of sensibility. Iodipin (250·0 c.cm.) was injected for several weeks, after which the pain diminished, and the injections were therefore continued (150·0 c.cm.). Suddenly during the night he got severe diarrhoea, after which he began to grow thinner, became exhausted, and showed very rapid pulse and tremor of the hands. After stopping the iodipin treatment all these "iodbasedow" symptoms gradually disappeared. J. HANDELSMAN.

THE SURGICAL TREATMENT OF EXOPHTHALMIC GOITRE.
(322) (Über die chirurgische Behandlung des Morbus Basedowii.)
SUDECK, *Munch. med. Woch.*, No. 16, 1911.

THE writer records the results of operative treatment in 34 cases of Graves' disease. He has had only one death, and of the 18 cases which have now passed from all medical care, 16 are completely cured and 2 are greatly improved. Of the remaining 15 cases, 8 are too recent to judge of the end result, 7 have now improved so far as to be able to resume work, and 1, though greatly improved, still suffers from myocarditis. The disfavour with which, in some quarters, operative treatment of this disease is still regarded is based on the high mortality of the older statistics, and when the latest results, based on many hundreds of cases, and showing a mortality of 1·5 to 5 per cent., are considered, surgical treatment will be more universally adopted.

Sudeck agrees with other writers that the secret of success in these cases lies in removing sufficient gland tissue, not less than three-fourths of the gland. The results are quite as good in cases where the gland is small but vascular as in those in which it is of large size. No stereotyped operation should be employed,

but the surgical attack should be directed on the most vascular and most actively functioning part of the gland. Local anæsthesia lessens the risk of the operation considerably.

D. P. D. WILKIE.

TWO CASES OF TUMOUR METASTASES INVOLVING THE

(323) **PARATHYROID GLANDULES.** THOMPSON, *Journ. of Med. Research*, April 1911, Vol. xxiv., No. 2.

THE first case is that of a woman, aged 32, who died one year after amputation of the right breast for cancer. At the autopsy metastases were found in almost all the organs, including all four parathyroid glands, two of which, those on the left side, were very extensively involved. The second case is that of a man, aged 57 years, who died from an inoperable lymphosarcoma in the neck. At the autopsy the growth was found more or less localised to the neck region, with extensive infiltration of three of the four parathyroid glands, the left superior parathyroid gland being unaffected. In spite of the great destruction of the parathyroid tissue no symptoms of tetany were present in either case.

A. NINIAN BRUCE.

PARATHYROID IMPLANTATION IN THE TREATMENT OF

(324) **TETANIA PARATHYREOPRIVA.** BROWN, *Annals of Surgery*, March 1911, Vol. liii., No. 3, p. 305.

THIS is an account of a woman aged 24, who suffered from exophthalmic goitre. As she did not respond to medical treatment, it was decided to remove the right lobe of the thyroid. Six months later the whole of the left lobe and most of the greatly enlarged isthmus were also removed, only a piece of the isthmus as big as a large walnut being left behind. Tetany developed eight days later. Calcium lactate, ten grains, two-hourly, produced no effect. An emulsion of ox parathyroids injected under the skin of the abdomen was followed by great improvement, but thirteen days later the attacks again commenced. Implantation of the thyroid (with presumably one or more parathyroids) from a dog was followed by considerable improvement, after which the attacks again commenced. Implantation of parathyroids from a living dog caused temporary improvement. The thyroid and parathyroids of a monkey were then transplanted; this was followed by greater improvement, and finally the case was cured by implanting human parathyroids. Thyroid feeding by tabloids was given a thorough trial without

any result. Although thyroid tissue was usually transplanted along with the parathyroids, the author considers that the attacks of tetany were due to the removal of the parathyroids, and that no remedy really ameliorates this condition except the administration, in some way, of parathyroid. A. NINIAN BRUCE.

ELEPHANTIASIS AND MYXEDEMA. (*Elephantiasis et* (325) *myxœdème.*) G. BREHIER, *Thèses de Paris*, 1910-11, No. 202.

THE thesis contains a record of ten cases of elephantiasis nostras, including a personal one in a woman, aged 25, in whom elephantiasis of the right lower limb, which had developed at the age of fourteen years, was accompanied by symptoms of myxœdema. Considerable diminution in the size of the limb followed the exhibition of thyroid extract. In the absence of any other causes, the writer attributes the elephantiasis in this case to hypothyroidism. J. D. ROLLESTON.

AN ENQUIRY INTO THE NATURE OF THE SKELETAL (326) **CHANGES IN ACROMEGALY.** ARTHUR KEITH, *Lancet*, April 15, 1911, p. 993.

PROFESSOR KEITH reviews in this paper the skeletal changes which occur in acromegaly. He lays especial stress on the well-known resemblances which exist between the skulls of acromegalics on the one hand and the Neanderthaloid and anthropoid crania on the other. He believes that hyper-pituitarism is in each of these cases the cause of the condition.

A considerable portion of the paper is occupied by a consideration of the growth-changes which effect the mandible and the changes secondary to this which occur in the temporo-mandibular joint, the area of origin of the temporal muscle and in the nuchal portion of the occipital squame.

Professor Keith believes that the growth-changes in the mandible chiefly affect the ascending ramus. It is extremely doubtful if this be correct. That there are changes in the ramus is well known, but it is by no means certain that they are primary.

He regards the evidence he brings forward as proving—

1. That the changes in acromegaly are of the nature of true growth. This was the view of Professor Cunningham, and is held by the many of those who have worked at this subject.
2. That the growth is due to the circulation through the body of a substance formed in the pituitary.

This has also been the belief of many workers at acromegaly, but no new evidence is brought forward in support of the hypothesis.

3. This pituitary secretion sensitizes the tissues, the actual cause of their growth being mechanical stimuli arising from muscular action and mechanical movement.

The latter part of this statement is undoubtedly correct, so far as it goes, but it is not a complete statement of the localization of the growth-changes.

4. The growth-changes seen in the acromegalic are of the same nature as those which occur in anthropoids and in the Neanderthal race, and both are probably due to a condition of hyper-pituitarism.

Cunningham and Freund laid especial stress on the facts of this statement. The hypothesis which it contains rests upon an hypothesis.

A. CAMPBELL GEDDES.

THE ADIPOSEO-GENITAL SYNDROME OF THE HYPOPHYSIS.

(327) (**Syndrome hypophysaire adiposo-génital.**) LYONNET and A. LACASSAGNE, *Lyon méd.*, 1911, cxvi., p. 31.

THE patient was a previously healthy woman, aged 25, who caught a chill during menstruation. The flow ceased, and did not return in the subsequent months, and obesity rapidly developed, the patient gaining over 40 lbs. in three months. The other symptoms were polyuria without glycosuria, and tachycardia. As in several of the recorded cases, there were no local nor general signs of an intracranial tumour. The skiagram of the sella turcica was indefinite. Treatment first by pituitary, and later by ovarian extracts, was unsuccessful.

J D. ROLLESTON.

OBESITY, HYPERTRICHOSIS, NERVOUS AND MENTAL

(328) **SYMPTOMS OF SUPRARENAL ORIGIN.** (**Syndrome adiposo-génital avec hypertrichose, troubles nerveux et mentaux d'origine surrénale.**) LANNOIS, PINARD et GALLAIS, *Gaz. des Hôp.*, No. 43, 1911.

THE case is described of a young woman of 19, who died of malignant adenoma of the left suprarenal, with metastatic growths in liver, lungs, and brain. Her symptoms were increasing weakness, with lumbar pains, great increase in weight, and various nervous and mental disorders, chief of which were attacks of hysteria, aboulia, and basophobia. Her skin was harsh and dry, and of a greyish brown tint. Over the chest and abdomen were

brush-like scars from stretching of the skin due to rapid onset of obesity. She had a profuse beard and moustache, and, in fact, resembled a male of twenty-five more than a female of nineteen.

She had double optic neuritis, and absence of deep reflexes, with general muscular weakness and wasting. In the left hypochondrium a large tumour was palpable, not tender on pressure, having its greatest diameter antero-posteriorly.

She improved under treatment with the fresh suprarenal of calves, but died of lung trouble about three years after the onset of symptoms.

Another similar case is described, recorded by Linser in 1903, in which adenomatous growths were present in both suprarenals. In this case, also, there were mental signs, overgrowth of hair, with development of beard and moustache, great increase of obesity, and amenorrhœa.

Apert has recorded this triad of symptoms in certain cases of hypertrophic lesions of the suprarenals. He makes five classes, viz. :—

1. Cases coming on in early life, and producing hermaphrodite development.

2. Cases where sexual morphology is normal, but where there is hypertrichosis.

3. Cases associated with abnormally early puberty.

4. Cases developing after puberty, and causing amenorrhœa, adiposity and abnormal growth of hair.

5. Cases producing increase in weight and loss of hair about the time of the menopause.

J. GODWIN GREENFIELD.

SUBACUTE SATURNINE MENINGITIS WITH TRANSIENT (329) MOTOR HEMIPARESIS. (*Méningite saturnine subaiguë avec hemiparésie motrice passagère.*) E. MOSNY and SAINT GIRONS, *Bull. et mém. Soc. méd. de Hôp. de Paris*, 1911, xxxi., p. 301.

THE patient was a painter, aged 48, who had five attacks of lead colic in the course of the last thirteen years. On the third day of the last attack left hemiparesis developed, accompanied by hemi-hyperalgesia. The symptoms completely disappeared in seven days. There was no history nor evidence of syphilis, and Wassermann's reaction was negative both in the blood and cerebro-spinal fluid.

The symptoms were therefore due to plumbism alone. The cause of the paresis was meningitis, the cerebro-spinal fluid being slightly turbid and showing a marked lymphocytosis.

J. D. ROLLESTON.

TYPHOID MENINGITIS. DAVID and SPEIK, *Journ. Amer. Med. Assoc.*, March 25, 1911.

DAVID and SPEIK discuss this condition. They point out that meningeal symptoms arising in the course of typhoid fever may be due either to meningism, to serous meningitis associated with the presence of exudate on the brain surface and with typhoid organisms, or to purulent meningitis with or without intestinal lesions. The only method of differentiating meningism from serous meningitis is lumbar puncture, the cerebro-spinal fluid in the latter case containing the typhoid bacillus. The possibility of the bacillus being present in the spinal fluid of ordinary cases of the fever, which show no special brain symptoms, is discussed, and from the experience of the authors, who examined twelve such cases with negative results, it is concluded that unless meningitis is present the micro-organism is not to be found in the fluid. In all twelve cases the latter was quite clear, and although in a considerable number it escaped under pressure, its withdrawal did not appear to exercise any ameliorating effects on the general symptoms presented by the patients. Several interesting cases are reported in detail, including examples both of serous and purulent meningitis. In one of the latter, although the bacillus typhosus was recovered from the exudate, the intestines were perfectly normal and presented no typical lesions.

The general conclusions of the authors are that typhoid bacilli are not found in the cerebro-spinal fluid of uncomplicated cases of the fever. That patients suffering from the ordinary nervous manifestations of the illness, such, for instance, as delirium, involuntary evacuations, severe headache, and so forth, are not benefited by the withdrawal of cerebro-spinal fluid. That in patients showing classical symptoms of meningitis, but in whom the fluid is sterile, a striking improvement sometimes follows lumbar puncture. Last, that when typhoid fever patients show meningeal symptoms, for example, neck rigidity, Kernig's sign, convulsions, or strabismus, lumbar puncture should always be practised and a bacteriological examination made.

C. B. KER.

MENINGEAL FORM OF PARATYPHOID B INFECTIONS.

(331) (*Forme meningée des infections paratyphoïdes B.*)
E. SACQUÉPÉE, *Bull. et mém. Soc. med. de Hôp. de Paris*, 1910, xxx., p. 831.

A MENINGEAL form of onset is not uncommon in paratyphoid infections. Sacquépée has observed it in 15 to 25 per cent. of the

severe cases. The symptoms are indistinguishable from those of cerebro-spinal meningitis, but the prognosis is very different, paratyphoid being essentially a benign affection, whereas cerebro-spinal meningitis, in spite of serotherapy, still remains a grave disease.

The cerebro-spinal fluid in every case showed some hypertension, but was almost always perfectly clear. There was usually slight lymphocytosis. Cultures of the cerebro-spinal fluid were always sterile, but the blood cultures and serum test for paratyphoid were invariably positive.

Four illustrative cases are recorded.

J. D. ROLLESTON.

PARATYPHOID B INFECTION WITH JAUNDICE AND MILD

(332) **MENINGITIS.** (Infection paratyphoïd B avec ictère par rétention et méningite bénigne.) E. SACQUÉPÉE, *Bull. et mem. Soc. méd. de Hôp. de Paris*, 1910, xxx., p. 598.

A MAN, aged 22, was admitted to hospital for meningitis associated with jaundice on the fourth day of disease. Immediate improvement followed lumbar puncture, when a clear fluid was obtained under hypertension containing 95 per cent. lymphocytes and a few polymorphs. An almost pure culture of paratyphoid B was obtained from the blood, but the cerebro-spinal fluid was sterile.

J. D. ROLLESTON.

THE LONG-FOX LECTURE: CERE BRO-SPINAL SYPHILIS.

(333) MICHELL CLARKE, *Bristol Med.-Surg. Journ.*, March 1911, p. 1.

THIS is an excellent summary of modern knowledge of the effects of syphilis on the nervous system. An interesting collection of statistics is cited, giving the results of examination of the cerebro-spinal fluid for the Wassermann reaction.

Various observers have got a positive reaction in from 90 to 100 per cent. of cases in general paralysis; from 0 to 80 per cent. in cases of tabes; and in only 3 to 7 per cent. of other forms of cerebro-spinal syphilis. This reaction is never positive except where the blood gives a positive reaction.

The pathology of the various forms of syphilitic meningo-myelitis is fully dealt with, but into the question of the pathology of tabes and the para-syphilitic affections the author does not enter.

J. GODWIN GREENFIELD.

ON SOME CAUSES OF MISTAKEN DIAGNOSIS IN THE SYNDROMES OF INTRACRANIAL HYPERTENSION AND IN THE LOCALISATION OF CEREBRAL TUMOURS. (De quelques causes d'erreur dans le diagnostic des syndromes d'hypertension intracranienne et dans celui de la localisation des tumeurs cérébrales.) VINCENT, *Revue neurologique*, Feb. 28, 1911, p. 209.

AMONG false localising symptoms there are two particularly specified by the writer:

(1) *Frontal ataxia*.—CASE 1. A woman of 33 presented obvious symptoms of increased intracranial pressure, headache, vomiting, slight exophthalmos, defect of vision, disturbance of equilibrium. The headache was very intense and located in the left frontal region, which was painful on percussion. Whenever the patient sat up in bed she fell to the right. When supported on her feet she deviated and fell to the right. A decompression was made over the left frontal area, notwithstanding the subtentorial symptom, and with justification, for though the dura was not opened the headache and other symptoms disappeared.

CASE 2. A woman of 54 suffered from headache, giddiness, vomiting, optic neuritis. Among apparently localising symptoms were nystagmus, marked disturbance of equilibrium, and tinnitus. Nevertheless at the autopsy the lesion was a glioma of the right frontal lobe, whereas the cerebellum was normal.

The author thinks that the ataxia has the characters of labyrinthine as opposed to cerebellar ataxia, and cannot attribute it to the frontal lesion directly, for it may occur with cerebral tumours situated elsewhere. The tumour appears to have the same action on the auditory nerve and the labyrinth as it has on the optic nerve and the papilla.

(2) *Paralysis of cranial nerves without tumour of the base or brain stem*.—A woman of 32 suffered from headache, vomiting, and impairment of visual acuity, due to bilateral optic neuritis. In addition the seventh nerve was paralysed on the left and the sixth on both sides. There was also a considerable degree of bilateral deafness. Post-mortem no tumour whatever was discovered, but simply an acquired hydrocephalus. The condition therefore was one of increased intracranial tension with involvement of certain cranial nerves: the existence of basal symptoms does not necessarily imply the presence of a tumour.

S. A. K. WILSON.

SENSORY DEFECTS IN HEMIPLEGIA WITH APHASIA. (Les (335) *troubles sensitifs au cours de l'hémiplégie-aphasie.*) FOIX, *Revue neurologique*, Jan. 30, 1911, p. 61.

TEN out of fourteen cases of aphasia showed some impairment of sensibility. This consisted mainly of an irregular anæsthesia in the affected side, the lower extremity being relatively unaffected. Sensibility to touch was the chief defect. Sensibility to painful and thermal stimuli was very slightly impaired. Deep sensibility was practically normal, but all the cases showed astereognosis. The value of this last symptom is somewhat discounted by the fact that the majority of the patients were hemiplegic.

S. A. K. WILSON.

ASSOCIATED MOVEMENTS OF THE AFFECTED LOWER EXTREMITY IN ORGANIC HEMIPLEGIA. (Sur les mouvements associés du membre inférieur malade chez les hémiplégiques organiques.) RAÏMISTE, *Revue neurologique*, Jan. 20, 1911, p. 71.

IN a previous communication (*Revue neurologique*, Feb. 15, 1909) Raïmiste described the following associated movements in organic hemiplegia:—

(1) The patient lies on his back with legs apart and arms folded. He is asked to bring the sound limb towards the affected limb, but the observer resists the movement; when this is done, it will be found that the affected limb is moved automatically towards the sound one.

(2) In a similar fashion, when the legs are adducted and the patient is asked to abduct the sound one, but is prevented, the affected limb moves outward.

To these the writer now adds the following:—

(3) The patient lies on his back, the legs a little apart. The examiner raises the extended paralytic limb by the heel to a height of, say, 50 degs. from the horizontal. The former is then asked to raise the sound limb, but is prevented by a third person, who puts his hand on the patient's thigh. When this is done it will be found that the patient makes an involuntary movement of depression of his affected limb.

(4) The patient, lying on his back, lifts the sound limb up, which he is then invited to depress, while the observer resists the movement. When this is done the affected limb is adducted, if it has previously been abducted, or if it is already adducted it is slightly elevated.

(5) In the same dorsal decubitus, the lower extremities apart, the patient rotates his sound limb outwards as far as he can, and is then asked to turn it in against resistance; as he attempts this the affected limb is rotated inwards, followed by a movement of adduction.

(6) If the sound limb is rotated in and then rotated out against resistance, the affected limb is seen to make a movement of abduction, or if it has been rotated in passively, to make a movement of rotation outwards.

The general explanation of all these associated movements is given by the author as follows:—

In normal individuals as well as in hemiplegics voluntary movements of one limb often provoke involuntary associated contractions of certain muscles of the other limb; but while the normal individual can arrest the resulting locomotor effect by contracting certain *other* muscles of the same limb, the hemiplegic is unable to do this owing to the feebleness of the voluntary movements of his affected limb. In hysteria or functional paralysis none of these phenomena have been noted by the author.

S. A. K. WILSON.

DISTURBANCES OF THE OCULAR MUSCLES IN TETANUS.

(337) (Ueber Augenmuskelstörungen bei Tetanus.) SALUS, *Klin. Monatsbl. f. Augenheilk.*, March 1911, p. 322.

AN orbital abscess containing a small piece of wood was the source of infection in this case. Within three or four days practically complete immobility of both eyes occurred, and later on trismus and tetanic spasms in other parts. Considerable improvement occurred, but death took place after three weeks.

The author discusses fully the literature of the subject, and especially the question as to whether the immobility should be ascribed to spasm or paralysis of the muscles, and decides in favour of the former cause.

H. M. TRAQUAIR.

A CASE OF RETROBULBAR NEURITIS ASSOCIATED WITH

(338) **NASAL OBSTRUCTION.** G. S. HETT and E. E. HENDERSON, *Oph. Review*, April 1911, p. 107.

ALTHOUGH well-marked nasal obstruction was present in this case, no sinus disease was discovered on exploration of the nose. At first there was peripheral restriction, with enlargement of the blind spot in each visual field, and also small central colour scotomata, relative on the left but nearly absolute on the right

side. The pupils reacted sluggishly, and vision was full in each eye, but there was a difficulty in seeing the end of a word. Subsequently the only abnormality in the field was an absolute scotoma, extending outwards from the blind spot along the horizontal meridian for about fifty degrees, and having a vertical measurement approximately equal to that of the blind spot throughout.

A nose wash was used, and the fields became normal. After relieving the nasal obstruction by operation all symptoms disappeared. There is a sketch of the condition of the nose and charts of the fields, which, however, do not indicate the size of the test objects used.

H. M. TRAQUAIR.

A CASE OF THE STRANGULATION OF THE OCULOMOTOR (339) NERVE. J. HORNOWSKI, *Neurologia polska*, 1911, Vol. i., N. 5.

THE case concerns a patient who, amongst other symptoms, had shown the following affecting his eyes:—(1) Ptosis in the left eye; (2) absence of corneal reflexes; (3) impossibility of moving the left eyeball upwards, and great difficulty in moving it inwards; (4) equality of the pupils, but no reaction to light.

Post-mortem examination.—A general very marked arteriosclerosis, especially in the vessels on the base of the brain. There was a small softening in the hind part of the left internal capsule. On the base of the brain, thickening of the pia mater; and a thick skein of connective tissue joined the thickened pia mater on the pons on the left side, with the pia in the region of Sylvian arteria, which was also thickened. This skein strangulated the left oculomotor nerve to such an extent that its peripheral part had become atrophied.

J. HANDELSMAN.

PSYCHIATRY.

HEREDITY AND INSANITY. F. W. MOTT, *Lancet*, May 13, 1911, (340) p. 1251.

THIS is the last of a series of six lectures on heredity, delivered at the Royal Institution, London, in January and February of this year. The author's conclusions are as follows:—

1. Hereditary predisposition is the most important factor in the production of insanity, imbecility, and epilepsy. It is the *tendency* to nervous and mental disease, generally speaking, which is inherited. This may be termed the neuropathic taint.
2. Education, sanitation, and the rest, as Bateson has stated, are only the giving or withholding of opportunity for good or ill.
3. Alcohol is a powerful coefficient, but not of itself the main

cause, in the production of insanity, except in the rather infrequent cases of alcoholic dementia.

4. Certain types of insanity may be transmitted with greater frequency than others. This has been termed similar heredity. The types are: Periodic insanity (also termed "manic-depressive"), delusional insanity, and epilepsy. The general rule, however, is for a different type to appear.

5. Mothers transmit insanity and epilepsy with much greater frequency than do fathers, and the transmission is especially to the daughters.

6. Anticipation or antedating is the rule whereby the offspring suffers at a much earlier age than the parent; more than one-half of the insane offspring of insane parents are congenital idiots or imbeciles, or have their first attack in the period of adolescence. This adolescent insanity may take an incurable form of dementia in a large number of cases; in others it is usually mania, melancholia, or periodic insanity, and not infrequently epilepsy with or without imbecility. Very rarely does the parent become insane before the offspring. This is a strong argument of hereditary transmission, possibly hereditary transmission of an acquired character.

7. Regression to the normal average may be (1) by marriage into sound stocks, or (2) by anticipation or antedating leading to congenital or adolescent mental disease terminating the perpetuation of the unsound elements of the stock.

8. High-grade imbeciles who are not at present in any way checked in procreating owing to social conditions interfering with survival of the fittest, together with chronic drunkards, neurasthenics, and neuropaths, are continually reinforcing and providing fresh tainted stocks.

9. Recurrent insanity owing to the fact that patients are not segregated for any length of time is probably the most potent cause of insane inheritance. Facts tend to support the opinion that the recurrent types of insanity during lucid intervals may breed a stock of potential lunatics and paupers.

10. Nature is always striving to go back to the normal average, and only relatively few of a stock are insane. A stock with a streak of insanity when combined with genius is not bad, and the same may be applied to a nation; but we only want a streak of genius and insanity, the great body of the nation should be of good normal average, for I believe that nation will possess the greatest potential virility in the struggle for existence that can breed from the greatest number of men and women with good bodily health who possess a large measure of the three attributes of civic worth, viz., courage, honesty, and common sense, combined with parentage, pride of family and pride of race.

J. H. HARVEY PIRIE.

MENTAL DISORDERS AND SUICIDE. G. H. SAVAGE, *Lancet*, (341) May 20, 1911, p. 1334.

A PRACTICAL post-graduate lecture on the dangers which arise in cases of mental disorder. The author first points out that suicide may be an unreasonable rather than an insane act. Two axioms he lays down are: (1) That all cases suffering from mental depression are potential suicides, and (2) that the promise of a melancholic patient is not to be trusted. Although most common in cases of depression, suicide also occurs in other forms of insanity. Suicide may depend on impulse, or it may follow design. In the impulsive group alcoholism, heredity, and suggestion play considerable rôles. Some patients may be called general suicides, but most are special in their methods. The deliberate class may be subdivided into those following morbid egotistical feelings, those dependent on altruistic feelings, and those arising from some outside influence, such as an illusion or a hallucination. The ordinary hypochondriacal melancholic is, as a rule, so full of his miseries that he rarely contemplates ending them; but in hypochondriacs with sexual ideas there is the greatest danger. All melancholia is associated with some bodily ailment, but sexual and alimentary disturbances and influenza seem to be the chief causes of mental disturbance. The altruistic group, when the patient feels that her death (for they are chiefly women) would benefit others, merges into that in which hallucinations play an important part. It must also be remembered that suicide occurs not only in the well-defined forms of insanity, but occasionally also in cases which have been for long quiet and harmless. For some of these no explanation is forthcoming, in others it may represent a recurrence of the original mental disorder.

J. H. HARVEY PIRIE

CONCERNING THE MIXTURES OF CHOLESTERINS AND OXY-
(342) **CHOLESTERINS IN THE SERUM IN DIFFERENT FORMS**
OF MENTAL DISEASE. G. PIGHINI, *Zeitsch. f. d. g. Neur. u.*
Psych., Bd. iv., H. 5, 1911.

He examined the serum of 4 normal persons, 3 moral imbeciles, 4 simple imbeciles, 4 imbeciles with epilepsy, 1 acute mania, 4 senile dementers, 19 epileptics, 7 manic-depressives, 14 precocious dementers, 11 alcoholics, 12 general paralytics, and found a considerable increase of cholesterin in the manic-depressives, the alcoholics, the general paralytics, and acute dementia præcox cases. In the others it was normal. He points out the necessity of determining the

amount of lecithin which may also be present, because cholesterin and lecithin are antagonistic, the former being anti-hæmolytic, the latter hæmolytic, and suggests that the presence of a Wassermann reaction depends on the relation between the amount of each present in serum or cerebro-spinal fluid. However much cholesterin may be present, we should not get a Wassermann reaction in the fluid if the lecithin in it is correspondingly increased so as to balance the cholesterin.

JOHN TURNER.

TREATMENT.

STATISTICS AND TREATMENT OF RECURRENCES IN THE (343) NERVOUS SYSTEM AFTER SALVARSAN TREATMENT.

(Zur Statistik und Therapie der Neurorezidive unter Salvarsanbehandlung.) J. BENARIO, *Munch. med. Woch.*, No. 14, 1911.

MUCH attention has lately been attracted by the numerous reports of cases in which nerve lesions have occurred a few months after the treatment of primary or early secondary cases of syphilis with salvarsan. Such lesions, affecting chiefly the cranial nerves, have been attributed by some to the direct toxic action of the drug, by others to an alteration of the nerve structure by the salvarsan, so that it was more liable to be attacked and injured by the syphilitic poison. It has apparently been forgotten that nerve lesions are not uncommon during the secondary stage in untreated cases of syphilis and also in those receiving ordinary mercurial treatment. Ehrlich has explained these recurrences in nerve tissue by imperfect sterilization of the system by the salvarsan, and Benario brings forward evidence in support of this view.

He has collected 126 cases of nerve lesions appearing after salvarsan treatment in 14,000 cases of early syphilis. Of these cases there were 5 in the primary stage, 22 in the combined primary and secondary stages, and 91 in the secondary stage. In 13 cases the primary lesion was extra-genital, and in 9 of these there was a *chancre céphalique*. Thus in this series extra-genital infection was rather more than twice as common as it is in syphilitic cases in general.

The cranial nerves were affected as follows:—The auditory nerve in 68 cases, the optic nerve in 41 cases, the facial nerve in 25 cases, the oculomotor nerve in 12 cases, and the trochlear, trigeminal and abducens in 4 cases each. In 96 per cent. of these cases the nerve lesion became manifest within four months of the salvarsan treatment. That these lesions are due to some of the

syphilitic virus remaining, and are not due to the toxic action of the salvarsan, is made clear by the following facts :—

(1) The long interval which intervenes between the injection of the drug and the appearance of nerve lesions.

(2) The pathological lesion, and particularly that in the optic nerve, shows the characters of an irritative and inflammatory lesion in contrast to the atrophic lesions which are produced by other arsenical preparations.

(3) The nerve affections appear during a definite period of the specific malady.

(4) No such lesions have been met with in non-syphilitic cases treated by salvarsan.

(5) The nerve lesions may be cured by a fresh dose of salvarsan.

(6) Such lesions have occurred especially in cases where small doses of the drug were given.

(7) Similar nerve troubles are not infrequent in cases undergoing mercurial treatment.

Naunyn collected 305 cases of cerebral syphilis, and found that in 20 per cent. the nerve lesions appeared during the first year after infection; and Mauriac, in 168 cases of cerebral syphilis, found that the first nervous symptoms appeared within the first year in 53 cases. There is thus little ground for the assertion that salvarsan treatment predisposes to early nerve lesions in syphilitic cases. In many of the cases in which an early recurrence of syphilis occurred in the nervous system, the Wassermann reaction was found to be negative. Evidently in the cranial nerves, or more probably in the periosteum of the bony canals through which they pass, the spirochaetes find a very secure habitat, so that some of them escape the action of the salvarsan.

These nerve lesions seem especially prone to follow an extra-genital chancre. Hoffmann and Ehrmann have demonstrated spirochaetes lying between the nerve bundles of cutaneous nerves in the primary sore, and Benario suggests that from a chancre céphalique there may be a direct spread of the infection backwards along the lymphatics of the cranial nerves. Further striking features of these nerve cases were the very intense character of the cutaneous eruptions from which they suffered, and the severe headaches, which in many cases were described as unbearable.

In order to avoid these secondary nerve lesions Benario recommends a more thorough primary treatment than is usually employed. It should consist of, firstly, an intravenous injection of salvarsan, then a very vigorous course of mercurial inunctions, followed by a second intravenous injection of salvarsan.

D. P. D. WILKIE.

**ADDITIONAL NOTES ON THE TREATMENT OF SCIATICA BY
(344) MEANS OF SALINE INJECTIONS.** A. G. HAY, *Glasgow
Med. Journ.*, April 1911.

IN this paper an account is given of ten cases of sciatica treated by saline injections. Of these two turned out not to be sciatica. Of the remaining eight, four were cured, two showed improvement, one received one injection and did not return, and one became definitely worse. The saline solution is injected into the nerve in quantities of 10 c.cs. at a time either at the sciatic foramen or at the gluteal fold, according as pressure causes greater pain at the one point or the other.

A. NINIAN BRUCE.

Review

TRAITÉ INTERNATIONAL DE PSYCHOLOGIE PATHOLOGIQUE. Tome I.: Psychopathologie Générale. Paris: Félix Alcan, 1910. Fr. 25.

THIS epoch-making work, when completed, will consist of three volumes, two of which have now been issued. The editor, Dr Marie, is the accomplished physician-superintendent of the Villejuif Asylum, Paris; he has gathered around him a brilliant array of collaborators, of whom may be noted: Bechterew, Clouston, Lugaro, Raymond, Magnan, Sikorsky, Ellis, Marinesco, Marro, Mingazzini, Pick, Pilez, and Ziehen.

An illuminating and attractive foreword by the editor contains a plea for the downfall of the barriers which limit the march of science and prevent it from becoming international. It was time, he writes, to unite in a collective treatise the varied tendencies, and consolidate their original diversity with some general ideas common to all modern alienists.

The first volume is concerned with general psycho-pathology, and its leading principle is that the functions of the brain are only comprehensible when studied in their co-operative action with the functions of all the other organs of the body. The brain, as an isolated factor, is as incomprehensible as any other organ of the body studied separately; chemico-physical and biological laws are applicable, and ought to be applied in its study.

An introductory essay by Grassset is to a large extent philosophical, and is a formal inquiry into the question of neurobiological unity. In an otherwise admirably and moderately

stated article an objectionable differentiation is made between the words psychical and mental; the latter term, according to this distinction, is limited to conscious and voluntary phenomena; the former has a wider significance, it includes mental, unconscious, and automatic states. Further, the theory is advanced that the region of mental action is in the prefrontal region of the brain, and the seat of unconscious and automatic states is in the remainder of the cerebral cortex. In view of the present state of our knowledge of the localisation of psychical phenomena this theory is far from being warranted.

A brief, critical account of the history of psychiatric medicine is given by Del Greco. The end of the nineteenth century has seen an outcry raised for facts, and war has been declared against speculation, under whatever form it may manifest itself. Science, without technique, relying only on observation and experience, would make no progress. While acknowledging these truths, a warning is uttered against the frequent clouding of facts, by undue haste in publication, by much exaggeration, and a little too much ingenuity in the minds of the discoverers. This scholarly paper makes pleasant and instructive reading.

In a sketch extending to one hundred and sixty pages, the editor gives a summary and discusses under the heading of "Psychiatric Anthropology" the varied stigmata of degeneration. These are amply illustrated by striking and faithfully executed drawings and pictures; there are no less than one hundred and eighty-nine illustrations. The letterpress contains much original matter, and the whole subject is presented in an informing and fascinating manner.

The uses of electricity for purposes of diagnosis and treatment, though they have been for a long time taken advantage of in a few asylums, are generally neglected. It is fitting that they should be commented on as they are in this volume. No point of practical importance is omitted. A picture of a mass of needles located in the pelvis of an hysterical lunatic, who had swallowed a packet, conveys in a vivid manner the advantages to be obtained from the use of the Röntgen apparatus.

Professor Mingazzini has wisely restricted the description of the nervous system to the results of analysis of researches on the morphology of the fissures and convolutions of the brain in the insane and mentally defective. He gives a sound interpretation to the atavistic anomalies and pathological lesions. In support of this opinion it will only be necessary to quote his conclusion that the brain in idiocy often shows more or less apparent or generalised remains of morbid or rudimentary processes dating from the foetal period.

In his thesis, "The Chemistry of the Cerebral Substance," Dr Marie gives, shortly, the variations that occur in the constituent chemical elements of the insane brain, and draws a comparison between these results and those obtained from the examination of diseased and healthy brains.

The chapters on the physiological and pathological functioning of the several organs are admirable in what they omit as well as in what they contain. They are introduced by Drs Marie and Dide, who point out the importance of a systematic examination of the several bodily organs in its relation to mental diseases. As in subsequent chapters on special clinical and physiological subjects, the matter and illustrations show a wide and extensive knowledge of the most modern scientific investigation in the special departments concerned. The question of syphilitic mental affections, in the light of new bacteriological and experimental ideas, is in the hands of Levaditi, a name in itself sufficient to indicate the intrinsic merit of the contribution made. Levaditi's essay is concluded by a description of the technique used in serum-diagnosis.

The general pathological anatomy of insanity is introduced in an able foreword by Klippel. Lugaro treats of histological diagnosis, Marinesco of lesions of the nerve cells, Dide of medullary changes, Médéa of histological changes of the peripheral nerves, and Laignel-Lavastine of the pathological anatomy of the sympathetic nervous system and of the viscera. Each writer is a master in the special subject he has undertaken, and the beautiful and exact illustrations of the text leave nothing to be desired.

The mental evolution of puberty is the subject of a monograph by Professor Marro. It would prolong this notice unduly to point out the many new and striking facts adverted to. The development of puberty is divided into three stages: a period of preparation, a period of acceleration, and a period of perfecting. On these three divisions Marro bases three classes of adolescent mental troubles. The subject of puberty is discussed in all its bearings and in a useful and practical manner.

It is interesting to note in the chapter concluding the first volume, and on the subject of "Modes of Examination," that Dr Clouston, who has done so much for the progress of psychiatry in this country, contributes an enlightening paper on clinical examination. It is followed by methods of psychological investigation, of which Bechterew is the author. A new and important departure, which is of special interest to many medical men in this country, is the mental examination of school children; it is written by Professor Ferrari and is well worthy of perusal. Finally Dr Carrara discusses mental troubles in their medico-legal relations.

IBID. Tome II. : Psychopathologie Clinique. Paris: Félix Alcan, 1911. 25 frs.

THIS volume is of an eminently practical nature, and is concerned with the clinical aspects of mental diseases. The 341 illustrations are of unusual excellence, and the text generally sustains the high level of merit reached in the previous volume.

The first chapter, by Professors Raymond and Bechterew, makes admirable and profitable reading on problems, the symptoms of which are as protean as they are obscure. It is to be regretted that, since he penned his part of the chapter, the former writer has died. He treats of neuroses and psycho-neuroses. Bechterew's subject is the mental troubles associated with organic nervous affections. In pointing out that Cullen, in 1776, was the first to use the term neurosis, Raymond defines neuroses: "As embracing certain affections of the nervous system without organic lesions appreciable by our present means of investigation." This definition is used to prevent ambiguity; the word neurosis is generally used with varying significance. The whole field of the neuroses is too wide to be included in a treatise, and the author has wisely confined his attention to the chief types, including hysteria, epilepsy, neurasthenia, chorea, Parkinson's disease, and others, especially the psychasthenia of Janet. Bechterew gives a summary of organic nervous diseases under three useful headings: diffuse organic affections, localised lesions, and affections the result of metabolic changes and toxic processes.

The important subject of general paralysis receives adequate and impartial treatment in the hands of Drs Marie and Lhermitte. An estimation of the difficulty in reaching a conclusion as to the causation of general paralysis is shown in the fact that no fewer than 265 causes have been given by different writers in the space of two years. The generally prevailing idea in France of the importance of alcohol as a causal factor is taking a backward place; syphilis is coming more and more into prominence. The dominant German view, and one gaining much credence in this country, that general paralysis is a syphilitic affection, is not wholly subscribed to by the authors, who report cases in which syphilis and general paralysis have gone on concurrently, the former, in some cases, yielding to appropriate treatment without affecting the unfavourable progress of the latter. Unfortunately, in this paper no account is taken of the importance of the examination of cerebro-spinal fluid for purposes of diagnosis. The work done by Dr Ford Robertson, with respect to histological findings, receives recognition; but, in general, too little attention is given to this author's researches and to the serious work of other English investigators.

The third chapter consists of two parts. The first deals with the forms of dementia, and the second with the speech and writing of the insane. Both parts are ably written by Professor Ziehen on the one hand, and Pick on the other. Ziehen confines himself to what may be termed the organic dementias. Dementia præcox is considered of such importance as to require a special monograph. Witness is borne to the inefficacy of treatment in conditions of dementia, though this view is qualified by the advantages often derived from the use of potassium iodide and strophanthus in arterio-sclerotic states. In general, the advantages of prolonged baths are insisted on, and varied sedatives, such as trional, veronal, dormiol, neuronal, and hédonal. The second part of the monograph, by Professor Pick, is informative and of much practical value. At the end of this essay an Appendix to Chapter II. is inserted. It contains graphic illustrations of the blood-vascular distribution, and figures after Elliot Smith, Brodina, and Campbell on cerebral structure and localisation, with synopses in tabular form of our knowledge of the several nerve centres, and a classification of aphasias.

The term dementia præcox, introduced by Kraepelin, has been subjected to much criticism. It is now used by the majority of alienists to embrace a distinct class of mental affections. The subject is considered in all its bearings by Drs Deny and Lhermitte. They adhere to the original differentiation into three clinical varieties: hebephrenic, catatonic, and paranoidal. At the same time, recognition is given to cases of a complex nature and exhibiting signs of one or more varieties. The clinical description is full and complete, and the picture is not overburdened with unnecessary detail. The sections on diagnosis, treatment, pathological anatomy, pathogenesis, and nature of the symptom-complex, though they produce no new facts, are well written, and omit nothing of essential value.

Degenerate mental conditions and psychopathies are introduced in a foreword by Sollier, who takes as a text, "The Relationship between Neuroses and Insanity." The wide field associated with the questions of idiocy, imbecility, and mental arrest is ably discussed by Roubinovitch. This writer recognises many authorities whom he has consulted with profit. He retains the old nomenclature and boundaries of idiocy and imbecility. It is wholly a matter of opinion, but the definitions suggested by Tanzi, in which idiocy is considered to be an acquired disease and imbecility of a congenital nature, seem to facilitate the study and classification of the several conditions involved. This criticism does not detract from the merit of Roubinovitch's work, which shows a wealth of reading and wide extent of knowledge.

Keeping in view how frequently dementia præcox is confounded

with degeneracy, Drs Colin and Bourilhet, in their chapter on "Degenerates and Mental Degeneracy," write clearly and concisely on the many different points involved in the consideration of these questions, and the unique pictures they use to illustrate their thesis give an added charm. It will not be pleasing to antivivisectionists who read this chapter to know that they receive special consideration.

Chronic delusional insanity, which has many synonyms, has its evolution traced in a systematic manner by Drs Magnan and Serieux. Much new matter is introduced. On one of the most hopeless of mental conditions as regards treatment, one of the most obscure in its clinical nature, and, especially in its early stages, one of the most difficult of diagnosis, the reader could not be placed in better circumstances to understand the subject.

In this volume the insanities of interpretation and persecution are the work of Drs Capgras and Serieux, who have made these questions peculiarly their own. As their work has previously been under review in the *Journal*, it will suffice to mention it.

The manic-depressive and infectious forms of mental disease, by Professor Pilcz, occupy the greater part of the seventh chapter. The cyclical phenomena exhibited by most of these insanities is dealt with in a specially attractive foreword by Bagenoff. In the very full description of the manic-depressive and periodic psychoses Pilcz lays down an excellent classification based on the lines adopted by Kraepelin. In the article on the infectious psychoses by the same author, it is pointed out that these mental troubles are not strictly allied to an abnormal high temperature, they may appear before or after the fever, at a time, in other words, when the organism causing the fever has been overcome.

Confusional insanity is divided by Drs Regis and Hesnard into general and autotoxic confusions. This essay is of no mean order; especially valuable in the discussion on general mental confusion, which occupies the first part of the chapter, is the question of treatment, both from practical and instructive points of view. The second part on auto-intoxications embodies valuable clinical observations.

The final chapter of the volume is devoted to a study of mental troubles of exogenous toxic origin. Alcoholism is taken as a type, and Drs Marie and Riche base their article on numerous and important clinical data, amply illustrated by striking tables and illustrations. It is a matter for congratulation to the editor that in this extensive treatise, where there are so many contributors, very little overlapping has taken place and such a uniform standard of excellence has been obtained. It need only be added that each subject is concluded by a full bibliography.

HAMILTON C. MARR.

BOOKS AND PAMPHLETS RECEIVED.

C. K. Mills. "Hemichorea, Hemiataxia, Hemiparesis, and Dilated Pupil, probably due to a Lesion near the Nucleus Ruber" (*Ann. of Ophthalm.*, Jan. 1911).

C. K. Mills. "Tumours and Cysts of the Spinal Cord, with a Record of Two Cases" (*Journ. Nerv. and Ment. Dis.*, 1910).

Dejerine. "Clinique des Maladies du Système nerveux. Leçon inaugurale." Paris: Masson et Cie, 1911.

Dejerine et Jumentié. "Contribution à l'Étude des Fibres Aberrantes de la Voie Pédonculaire" (*Rev. Neurol.*, 1910).

Isador H. Coriat. "Abnormal Psychology." London: William Rider & Son, 1911.

Mme. Long-Landry. "La Maladie de Little: Étude anatomique et pathogénique." Paris: Delarue, 1911.

Hereward Carrington and J. R. Meader. "Death: its Causes and Phenomena." London: William Rider & Son, 1911. 8s. 6d.

Dejerine. "Cahier de Feuilles d'Autopsies pour l'Étude des Lésions du Névraxe." Deuxième Édition, revue et augmentée. Paris: Vigot Frères, 1911.

Meige. "Infantilisme, Gigantisme, Nanisme." Paris, 1911.

Meige. "Hystérie: Neurasthénie." Paris, 1911.

Meige. "Trémopobie, un nouveau Cas" (*Rev. Neurol.*, 1909).

Meige. "Les Fous dans l'Art" (*Nouv. Icon. de la Salpêtrière*, 1909).

Andrew Hunter. "The Determination of Small Quantities of Iodine, with Special Reference to the Iodine Content of the Thyroid Gland" (*Journ. Biol. Chem.*, May 1910).

Sutherland Simpson and Andrew Hunter. "The Possible Vicarious Relationship between the Pituitary and Thyroid Glands" (*Quart. Journ. Experiment. Physiol.*, No. 2, Vol. iii.).

Sutherland Simpson and Andrew Hunter. "Does the Pituitary Body Compensate for Thyroid Insufficiency?" (*Proc. Soc. for Experiment. Biol.*, Vol. viii., No. 1).

Sutherland Simpson and Andrew Hunter. "Relations between the Thyroid and Pituitary Glands" (*Proc. Soc. for Experiment. Biol.*, Vol. vii., No. 1).

Jessie King. "The Cortico-Spinal Tract of the Rat" (*Anat. Rec.*, Vol. iv., No. 7).

Sutherland Simpson and H. W. Mayes. "The Cardio-Inhibitory Fibres in the Woodchuck (*Marmotta Monax*)" (*Proc. Soc. for Experiment. Biol.*, Vol. viii., No. 1).

Sutherland Simpson and Luella King. "Localisation of the Motor Area in the Sheep" (*Quart. Journ. Experiment. Physiol.*, Vol. iv., No. 1).

Sixth Annual Report of Kingseat Asylum and Mental Hospital, 1910.

Contributions from the Department of Neurology, University of Philadelphia, Pennsylvania, for the years 1909 and 1910, Vol. v.

H. Oppenheim. "Ataxia spinalis chronica infantilis et congenita" (*Neurol. Centralbl.*, No. 9, 1911).

H. Oppenheim. "Zur Lehre von den neurovaskulären Erkrankungen" (*D. Ztschr. f. Nervenheilk.*, Bd. 41).

H. Oppenheim. "Pathologie und Therapie der nervösen Angatzustände" (*D. Ztschr. f. Nervenheilk.*, Bd. 41).

H. Oppenheim. "Ueber Dauerschwindel" (*Monatsschr. f. Psychiat. u. Neurol.*, Bd. 29).

H. Oppenheim und Cécile Vogt. "Wesen und Lokalisation der kongenitalen und infantilen Pseudobulbärparalyse" (*Journ. f. Psychol. u. Neurol.*, Bd. 18).

Collected Papers from the Pathological Laboratory of the London County Asylums, Woodford Bridge, Essex, 1911.

Henry S. Upson. "Serious Mental Disturbances Caused by Painless Dental Lesions" (*Amer. Quarterly of Roentgenol.*, Dec. 1910).

Arthur S. Hamilton. "A Study of the Senile Spinal Cord in Cases of Mental Disease" (*Boston Med. and Surg. Journ.*, 1910).

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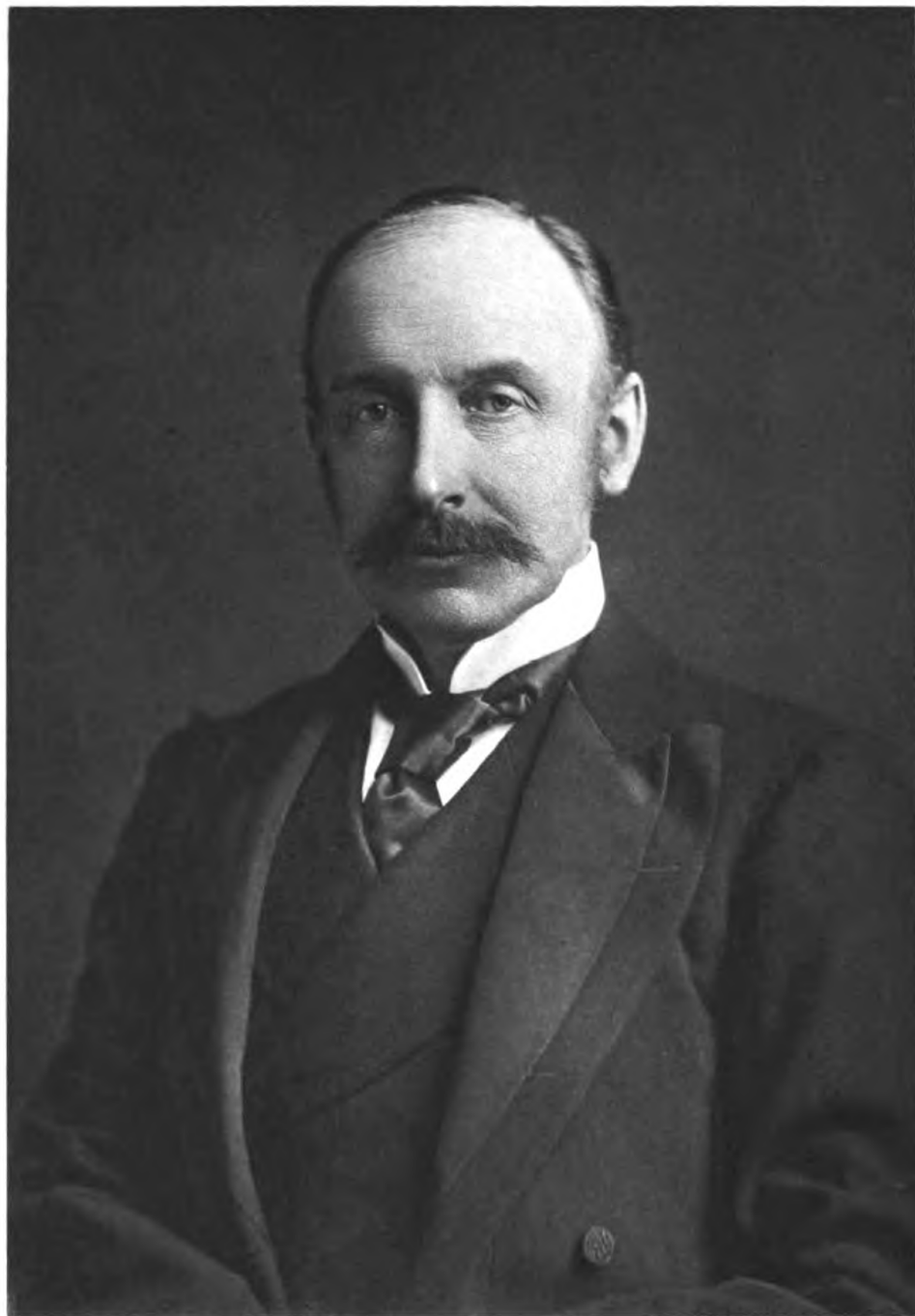
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From a Photograph by J. C. H. Balmain, Edinburgh

Alexander Bruce

Review of Neurology and Psychiatry

In Memoriam.

**ALEXANDER BRUCE, M.A., M.D., LL.D. Aberd.,
F.R.C.P.E., F.R.S.E.**

THE death of Alexander Bruce, the founder and editor of this *Review*, at the age of 56, has robbed neurology of one of its pioneers and one of its best exponents. Coming at a time when he was utilising a ripe pathological and clinical experience, when, as his recent valuable contributions testify, his enthusiasm and energy were unabated and his mental faculties at their best, his death is nothing less than a great misfortune to neurological science. For some time past Dr Bruce had not been in good health, yet, with that zest for work so characteristic of his nature, and with a determination which compels admiration, though feeling far from well and it may be realising that the end could not be far distant, he succeeded in completing in an incredibly short period of time the splendid translation of Oppenheim's text-book upon which he was engaged. This was the last literary work he was able to accomplish. In the late spring he spent several weeks in the South of England, but returned to Edinburgh towards the end of April little the better for the change. The end came on the morning of Sunday, June 4th.

Alexander Bruce was born at Ardiffery, Cruden, Aberdeen-

shire. He received his early education at the Chanonry School, Old Aberdeen. In 1874 he graduated in Arts at the University of Aberdeen with first-class classical honours after a very brilliant student career. His undergraduate record at Edinburgh University, where he pursued his medical studies, was no less brilliant, for among other prizes and bursaries he received at graduation the Ettles Scholarship, which is awarded to the most distinguished student of the year. After acting as house physician to the Edinburgh Royal Infirmary and assistant clinical clerk at the West Riding Asylum, he studied at Vienna, Heidelberg, Frankfort, and Paris. In 1887 he gained a gold medal for the thesis which he presented for the degree of doctor of medicine.

After his return to Edinburgh Dr Bruce was appointed pathologist to the Royal Infirmary, Royal Hospital for Sick Children, and Longmore Hospital for Incurables, while he lectured on pathology at the Royal College of Surgeons for a number of years. Later he was appointed assistant physician, and subsequently full physician to and lecturer on clinical medicine at the Royal Infirmary. Some years ago he gave up teaching pathology and lectured upon Neurology and the Practice of Medicine in the School of the Royal Colleges. Only last year he was offered and accepted the post of chief medical officer to the Scottish Widows' Life Assurance Society. For a number of years Dr Bruce was engaged in general practice, which he gave up in later years as he acquired a large and extensive consulting practice.

Some years ago Dr Bruce delivered the Morison Lectures before the Royal College of Physicians of Edinburgh. In 1899 he was elected a corresponding member of the Neurological Society of Paris. The Royal Society of Edinburgh in 1908 awarded to him the Keith Prize for the biennial period of 1905-1907 for his communication on "The Distribution of Cells in the Intermedio-Lateral Tract of the Spinal Cord." The University of Aberdeen conferred on him, in 1909, the honorary degree of LL.D.

Dr Bruce's contributions to the literature of medicine were all of a very high order. To appraise them seems almost unnecessary. His "Illustrations of the Mid and Hind Brain" and his "Topographical Atlas of the Spinal Cord" are classics

known to all neurologists. His monograph on the intermedio-lateral tract—and the same is true of all his papers, anatomical, pathological, and clinical—is characterised by the wealth of exact original observation which it contains, set forth in precise and simple language. No greater compliment could be accorded to a scientific worker than that paid to Dr Bruce by the Dean of the Faculty of Law of the University of Aberdeen, who, in presenting him for the honorary degree of LL.D., said : “ It is not too much to say that there is no neurologist in Britain whose work has better stood the test of time.”

As a physician and as a teacher there is no one for whom the writer had a greater admiration. A shrewd and original observer, precise in his methods as an anatomist, thorough and most painstaking in his examination of a case, didactic and strictly scientific in his teaching, dogmatic in his opinion yet scrupulously careful never to overstep the conclusions warranted by the facts observed, ever ready to listen to the opinions of his juniors, he never lost sight of that broad outlook which constitutes the art of medicine. Dr Bruce possessed at the same time a grave and impressive manner which inspired confidence, and, underlying this, a sparkle of humour, coupled with a kindly disposition and an obvious sympathy with the human side of life, which, added to the qualities already mentioned, made him what he was—a popular teacher and successful consultant.

E. B.

LIST OF PUBLICATIONS BY THE LATE DR ALEXANDER BRUCE.

BOOKS.

“Illustrations of the Mid and Hind Brain.” Pentland, 1892.

“Topographical Atlas of the Spinal Cord.” Williams & Norgate, Edin., 1901.

Translation of Thoma's “Lehrbuch der Pathologie.” A. & C. Black, London, 1896.

Translation of Oppenheim's “Lehrbuch der Nervenkrankheiten.” Otto Schulze & Company, Edin., 1911.

Translation of Oppenheim's “Psychotherapeutische Briefe.” Otto Schulze & Company, Edin., 1907.

CONTRIBUTIONS.

ANATOMICAL AND PATHOLOGICAL.

"On the Absence of the Corpus Callosum in the Human Brain, with the Description of a New Case" (*Proc. Roy. Soc. of Edin.*, 1887).

"On the Connections of the Inferior Olivary Body" (*Lab. Reports, Roy. Coll. of Physicians of Edinburgh*, Vol. ii.).

"On the Segmentation of the Nucleus of the Third Cranial Nerve" (*Proc. Roy. Soc. of Edin.*, 1889).

"On a Human Cyclops" (*Proc. Roy. Soc. of Edin.*, 1891).

"On a Case of Descending Degeneration of the Lemniscus, consequent on a Lesion of the Cerebrum" (*Brain*, 1893).

"Syphilitic Nodose Periarteritis" (*Edin. Royal Infirm. Reports*, 1894).

"Microtome for Cutting Sections under Spirit" (*Journ. Roy. Micros. Soc.*, 1895).

"On the Flocculus" (*Brain*, 1895).

"On a Descending Degeneration in the Posterior Columns in the Lumbo-Sacral Region of the Spinal Cord" (*Brain*, 1896).

"D'un Faisceau Spécial de la Zone Latérale de la Moelle Epinière" (*Rev. Neurol.*, 1896).

"On a Special Tract in the Lateral Limiting Layer of the Spinal Cord" (*Scot. Med. and Surg. Journ.*, 1897).

"On the Endogenous or Intrinsic Fibres in the Lumbo-Sacral Region of the Cord" (*Brain*, 1897).

"Note on the Upper Terminations of the Direct Cerebellar and Ascending Antero-Lateral Tracts" (*Brain*, 1898).

"Contribution to the Question of the Origin of the Facial Nerve" (*Scot. Med. and Surg. Journ.*, 1898).

"A Contribution to the Localisation of the Motor Nuclei in the Spinal Cord of Man" (*Scot. Med. and Surg. Journ.*, 1901).

(With Stuart M'Donald and J. H. Harvey Pirie.) "A Case of Localised Doubling of the Spinal Cord" (*Rev. Neurol. and Psychiat.*, 1905).

(Ditto.) "A Second Case of Partial Doubling of the Spinal Cord" (*Ibid.*, 1906).

"Distribution of the Cells in the Intermedio-Lateral Tract of the Spinal Cord" (*Trans. Roy. Soc. of Edin.*, 1906).

(With J. H. Harvey Pirie.) "A Plea for the Study of the Intermedio-Lateral Cell-System of the Spinal Cord" (*Rev. Neurol. and Psychiat.*, 1907).

(With J. H. Harvey Pirie.) "On the Origin of the Facial Nerve" (*Rev. Neurol. and Psychiat.*, 1908).

(With J. W. Dawson.) "On the Relations of the Lymphatics of the Spinal Cord" (*Journ. Pathol. and Bacteriol.*, 1910).

CLINICAL AND PATHOLOGICAL.

- "A Case of Cerebral Tumour" (*Brain*, 1883).
- "Chronic Poisoning by Bisulphide of Carbon" (*Edin. Med. Journ.*, 1884).
- "A New Portable Galvanic Battery" (*Edin. Med.-Chir. Soc. Trans.*, 1884).
- (With Dr John Thomson.) "A Case of Progressive Muscular Atrophy in a Child with a Spinal Lesion" (*Edin. Hosp. Reports*, 1893).
- "Rupture of an Aortic Aneurism into the Superior Vena Cava" (*Edin. Med. Journ.*, April 1895).
- (With Sir Thomas Fraser.) "On a Case of Diabetic Neuritis" (*Edin. Med. Journ.*, 1896).
- (With Harold J. Stiles.) "Drainage through the Fourth Ventricle in a Case of Acquired Hydrocephalus" (*Scot. Med. and Surg. Journ.*, 1898).
- "A Case of Cerebellar Tumour, considered with Reference to its Localisation" (*Scot. Med. and Surg. Journ.*, 1899).
- "On a Case of Traumatism of Part of the Cauda Equina, complicated by Alcoholic Neuritis" (*Scot. Med. and Surg. Journ.*, 1900).
- (With Thomas Annandale.) "Case of Laminectomy for Paralysis due to Pressure on Nerve Root" (*Scot. Med. and Surg. Journ.*, 1901).
- (With Elsie M. Inglis.) "Case of Cerebral Hæmorrhage resulting from Deciduoma Malignum" (*Trans. Edin. Obstet. Soc.*, 1901).
- "A Case of Double Paralysis of the Lateral Conjugate Deviation of the Eyes" (*Rev. Neurol. and Psychiat.*, 1903).
- "Unusual Sequela of Herpes Zoster (? Posterior Poliomyelitis)" (*Rev. Neurol. and Psychiat.*, 1907).
- (With J. H. Harvey Pirie and W. Kelman Macdonald.) "Aneurism of the Anterior Cerebral Artery, with unusual Prolongation of Life after Rupture: Autopsy" (*Rev. Neurol. and Psychiat.*, 1908).
- "A Case of Arterio-Venous Aneurism of the Internal Carotid Artery and Cavernous Sinus" (*Rev. Neurol. and Psychiat.*, 1908).
- "A Case of Spasmodic Syringomyelia (?)" (*Rev. Neurol. and Psychiat.*, 1908).
- (With George Mackay.) "Epithelioma of the Hypophyseal Duct" (*Rev. Neurol. and Psychiat.*, 1909).
- (With J. S. Fraser.) "A Case presenting Ménière's Symptoms along with Facial Paralysis" (*Rev. Neurol. and Psychiat.*, 1910).
- (With Theodore Shennan.) "A Case of Acute Hæmorrhagic Meningitis due to Anthrax" (*Rev. Neurol. and Psychiat.*, 1910).
- (With J. H. Harvey Pirie.) "A Case resembling Myasthenia Gravis, with Peculiar Changes in the Nervous System" (*Rev. Neurol. and Psychiat.*, 1910).
- (With David Wallace.) "Case of Dislocation between the Atlas and the Axis Vertebrae, with Probable Fracture of the Odontoid Process; Reduction; Recovery" (*Rev. Neurol. and Psychiat.*, 1910).
- (With J. M. Cotterill.) "Posterior Basal Meningitis; Acquired Hydrocephalus; Cures by Drainage of the Fourth Ventricle" (*Rev. Neurol. and Psychiat.*, 1911).

Original Articles

ON THE RELATIONS OF THE LYMPHATICS OF THE SPINAL CORD.

By ALEXANDER BRUCE, M.D., F.R.C.P.E., and J. W. DAWSON, M.D.

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(Plates 9-16.)

It is becoming more and more evident that an accurate knowledge of the lymphatic system of the spinal cord (and the same holds equally true with regard to the brain) is essential for the proper interpretation of the pathological processes which take place within it. Much has hitherto been attributed to the blood vessels, which there is increasing reason to think is in reality to be associated rather with the lymphatic system. The latter is admitted to be the main channel for the removal of waste products and products of degeneration of the constituent elements of the central nervous system, more especially of the myelin. Attention is now being more and more drawn to the effects of disorders of the lymphatic circulation—such as stasis and dilatation of the spaces—upon the nervous elements, but little definite information is as yet available. Arndt (1870 (1)) was one of the first to recognise the influence of a hyperlymphosis or lymphostasis upon the specific elements of the central nervous system, and since his time various important contributions have been made to this subject, some of them quite recently. There is an accumulating body of evidence that the lymphatics play a part probably not subordinate to that of the blood vessels as channels by which infective agents (toxins and organisms) are conveyed to the cord or distributed within it. Among other papers we may refer to the work of Meyer on tetanus, of Orr and Rows (1907 (9)) on the flow of the lymph stream in the spinal roots of the cord, and to the classical work of Wickman on poliomyelitis.

LYMPH CHANNELS.

It is generally admitted that the brain and spinal cord do not possess lymph vessels closed in by walls of their own. The lymph circulates in spaces around the blood vessels, and these spaces communicate with the lymph sacs in the membranes. Our present knowledge of these channels is largely due to the early researches of His (1865 (5)), Robin, and Obersteiner (1900 (7)), and later of Axel Key and Retzius. In the text-books of Obersteiner and Schmaus-Sacki (1901 (12)) we find it stated that within the spinal canal from without inwards are found: the epidural space, filled with fat and venous plexuses; the dura covered on both sides with endothelium, and composed of dense connective tissue in which are numerous narrow lymph spaces communicating with the subdural space; the subdural space, normally a capillary space; the arachnoid, a non-vascular membrane covered on both surfaces with endothelium; the sub-arachnoid space, in which circulates the cerebro-spinal fluid, and crossing which are numerous connective-tissue threads dividing it into larger and smaller lymph sacs (this space communicates with the lymph spaces in the pia and also with the lymph spaces within the perineural sheaths); the pia, in which are found the blood vessels which penetrate the cord, also numerous lymph spaces which communicate with the sub-arachnoid space; the epispinal space or space of His, a fissured space often permeated by radial fibres; dense glia forming the cortical surface of the cord (Lenhossék's membrane or *membrana limitans glia superficialis*).

In early development the central nervous system has no blood vessels, and these first enter as buds from the pia into the up till now solely ectodermal tissue, carrying before them the *membrana limitans superficialis* as a *membrana limitans perivascularis*. With the buds there also enters loose connective tissue from the pia, which plays the rôle of adventitia, and the spaces of which are continuous with the spaces of the pia and through them with the sub-arachnoid space. Therefore, between the adventitia and the *membrana limitans perivascularis* we have a space—the perivascular space of His—continuous with the epispinal space of His, and a continuation of the sub-arachnoid space in the loose tissue of the adventitia—the adventitial lymph space or Virchow-Robin space. These two lymph spaces are said to exist everywhere independently of each other around the vessels of the central nervous system, one within the adventitia (intravascularis), and one outside the adventitia (extra- or perivascularis). Where the adventitia is absent or hardly perceptible, as in the finest capillaries, the two spaces blend into one, and there is only one space between the limiting membrane and the capillary endothelium. Further, each ganglion cell is surrounded by a wide space—the space of Obersteiner—through which it sends its processes and within which two or three lymphoid cells are frequently found. Obersteiner's diagram, copied into most text-books, has familiarised us with his statement that there is a direct transition of the perivascular space into the pericellular space, and that the ganglion cells are thus embedded in the perivascular lymph system.

The tissue lymph spaces discharge everywhere into the perivascular

space, either through the interstices of the glia tissue, or by the protoplasmic processes of the glia reticulum, and the lymph flows out in the direction of the periphery of the cord. A lymph flow outwards is also assumed in the adventitial lymph sheaths.

The lymph channels of the anterior and posterior roots are also in communication with the lymph system. Orr and Rows (1907 (9)) have pointed out the evidence of a continuous flow of lymph upwards along the peripheral nerves and spinal roots. Their researches prove that the main current lies at the periphery of the nerve bundles in the inner meshes or lymph spaces of the fibrous perineural sheaths. The current, as it reaches the cord, passes partly to the lymph spaces of the pia arachnoid, but mainly along the nerve roots into the substance of the cord.

According to this account, therefore, we have two independent lymph spaces, namely, the inner, known as the Virchow-Robin or adventitial space, continuous with the sub-arachnoid space, and the outer, known as the perivascular space of His, continuous on the one hand with the epispinal space of His, and on the other hand with the pericellular space of Obersteiner. Regarding the adventitial lymph space all is clear and definite; regarding the perivascular and pericellular lymph spaces, however, many false views have been promulgated, and these spaces are often confounded with another space which is regarded by many observers emphatically as an artefact.

In transverse sections of the cord fixed in formalin or chromic salts and hardened in alcohol, obvious clefts are found around the vessels and cells. His (1865 (4)) stated that these clefts were smooth, and that the outer wall was formed of a condensed layer of glia substance covered with endothelial cells. His further succeeded in completely filling up the perivascular and pericellular spaces by injecting from the epispinal space. Obersteiner (1900 (7)) found, in the presence of small cells, indistinguishable morphologically from lymphoid cells, within the pericellular spaces, a proof of their being lymph spaces. Friedmann (3) also came to the conclusion that the perivascular and pericellular spaces were preformed and lined by endothelium analogous to lymphatic endothelium.

More recent investigations have proved that the occurrence of the spaces of His and Obersteiner can be avoided, and that they are due to shrinkage through the methods of fixation. A careful consideration of the clefts shows that they rarely possess the smooth walls ascribed to them by His, and that where such is

the case, the endothelial lining of His and Friedmann is undoubtedly a layer of glia cells which have so folded themselves round a space through the tissue retraction. More usually, fine threads of glia fibrils connect the adventitia of the vessel or membrane of the ganglion cell to the ragged outer wall of the space (Plate 10, Figs. 5 and 6). Obersteiner's picture of "a rose-branch beset with thorns" can thus be traced to fine glia fibrils which have remained existent between the vessel and the retracted tissue (Plate 10, Fig. 5). Obersteiner admits that the perivascular and pericellular spaces may increase in size through tissue retraction, but maintains that the normal existence of such spaces is proved by the presence of the free round cells already mentioned.

Many advocates of the perivascular space admit the presence of these fine threads connecting the outer wall with the adventitia of the vessel and with the ganglion cell, and amongst these Schroeder (1908 (13)) maintains that the true perivascular space of His is still within the *membrana limitans perivascularis*, which remains adherent to the ganglion cell or adventitia, and that the shrinkage space is external to this limiting membrane.

The usual treatment with alcohol in the process of hardening gives rise to considerable shrinkage on account of the varying consistence of the individual elements of the tissue, and so we get rupture at certain parts. One of the parts of predilection is in the neighbourhood of the vessels. The tear here is directly external to the *membrana limitans perivascularis*, and as this is a condensed layer it remains adherent to the vessel adventitia, while the glia tissue outside retracts. Such artificial shrinkage spaces are constantly found in preparations, and the vessel as a rule lies somewhere on the wall of the space—not in the middle (Plate 9, Fig. 3). The space is traversed by individual small fibres radiating from the perivascular glial ring round the vessel. In œdema of the cord and in arterio-sclerosis we find that these shrinkage spaces are specially large.

Amongst those who have most strenuously opposed the teaching regarding the perivascular and pericellular lymph spaces is Nissl. Nissl has followed Degenkolb and Weigert in looking upon the adventitia as a biological limiting layer, separating mesodermal from ectodermal constituents of the nervous system. He finds in this biological limiting layer the key to the understanding of the histopathology of the nervous system. Nissl (1903 (6)) claims that there is

no penetration of mesodermal elements into the nervous substance so long as this limiting layer remains intact, and that were the perivascular and pericellular spaces really lymph channels with endothelial nuclei in their walls, the parenchyma of the nerve tissue would be over-run with lymphoid (mesodermal) elements. To grant the existence of preformed perivascular and pericellular spaces would be, he asserts, to mistake and underestimate the part played in the histopathology of the cord by the non-nervous cells of ectodermal origin. In inflammatory conditions in the cord and in slow degenerations the reparatory processes within and without this limiting layer are altogether independent of each other, but if ectodermal or mesodermal elements are so injured that they could no longer form checks to the growth of uninjured elements, then the destroyed biological balance would be restored by progressive processes on the part of constituents of either origin. These views are too theoretical to be of service in the solution of the problem.

ARTIFICIAL INJECTION OF THE LYMPHATICS.

His and Obersteiner injected the perivascular and pericellular spaces from the epispinal space, but there are many objections to such a method, the chief being that the very delicate nature of the nerve tissue causes it to give way at the points of least resistance under the pressure. Key and Retzius found it impossible to inject the perivascular and pericellular spaces from the sub-arachnoid space, from which they inferred that these spaces are not in communication with the large lymph spaces of the central nervous system.

Many observers see in the epispinal space a result of tissue retraction. This would indeed almost follow from the absence of the perivascular space, for if the adventitia is closely applied to the *membrana limitans perivascularis*, then the pia intima, which is carried in as the outermost layer of the adventitia, must be closely applied to the *membrana limitans superficialis* without any epispinal space. In tissues fixed in Zenker's solution, and very gradually carried through the different hardening fluids, we find that this pia intima is closely adherent to the surface of the cord and that no perivascular or pericellular spaces are present. Ranke (1908(10)) has also found this to be the case in frozen sections from fresh material and in tissues fixed in Cox's solution.

It will be seen from what has just been said that artificial injection of the lymph paths of the cord gives unreliable results. Fortunately, however, there is a natural process of injection

of the lymphatics which can be depended upon as being absolutely selective, and which is therefore eminently suitable for the study of the lymph paths. This process occurs in every case in which a slow degeneration of the myelin is taking place, and it is seen specially well in cases of long-continued compression of the cord, or in the sub-acute combined degenerations such as are so often seen in pernicious anæmia. Here we get the most marked distension of the *adventitial lymph spaces* by cell elements filled with fat—the so-called compound granular cells. The course of all the vessels, arterial, venous, and capillary, can be traced by the dense layer of these cells which surrounds the vessels. *In every case it is significant that the cells have pushed apart the connective-tissue fibrils of the adventitia and that an outer layer of adventitia, pink with Van Gieson's stain, bounds the dilated lymph spaces and is closely applied to the glial membrane, leaving no perivascular space.*

Van Gieson's method of staining is particularly well adapted to demonstrate the boundary of the lymphatic space and its relation to the surrounding glial tissue, as it stains the connective tissue a more or less deep pink colour, and the glial tissue an orange-yellow colour. As will be seen from Plate 9, Figs. 1 and 2, the space surrounding the small arterioles, venules, and capillaries is bounded by the pink line of connective tissue which represents the outer layer of the adventitial lymphatic sheath.

COMPOUND GRANULAR CELLS.

When the degeneration of myelin has reached a certain stage, then resorption of the degenerated material sets in by means of granular cells. The space occupied by the degenerated nerve fibres becomes replaced by granular cells. These may remain a shorter or longer time, but finally they reach the lymphatic spaces in the adventitia, and are thence carried to the inner layers of the pia. (Nissl named these compound granular cells *Gitterzellen*, or lattice cells, because he considers that the lattice structure of the protoplasm—found after the fat is extracted—is the chief characteristic of these elements (Plate 9, Figs. 1 and 2). The fat may be absorbed by the cell in the form of clumps of degenerating myelin, or in a dissolved form as saponified fat, and, by synthesis within the cell, be

transformed again into neutral fat when it appears as fine droplets (Plate 11, Figs. 9 and 10). Simultaneous with the work of phagocytosis of the fat the solution of the degenerated myelin takes place. This process is helped by the lymph stasis through its power of distending and dissolving the nerve fibre. The fluid components may become directly absorbed by the cells as just stated, or be absorbed directly into the lymph spaces; and one finds in the lymph sheaths, in addition to granular cells, free granular, fatty detritus. The granular cells at first fill up the space of the degenerated fibre, and on longitudinal sections of the cord are seen in rows in the tubular space originally occupied by the nerve fibres. On transverse section they appear as large, rounded cells with faintly staining, finely vacuolated protoplasm (Plate 9, Figs. 1 and 2). As the granular cells become laden with fat, the adventitial lymph spaces are opened up, and the peripherally streaming lymph, acting as a suction pump, draws the cells into the spaces. The number of the compound granular cells varies with the duration of the process and the nature of the degeneration. When all the decayed material has been absorbed by the cells, and these have been drawn into the lymph spaces of the adventitia, a dense glia tissue, with narrow tissue spaces, takes the place of the degenerated fibres and compound granular cells. The latter may still be found isolated in the tissue and immediately around the vessels. Through a further resorption of the fat from the cell—the fat may be absorbed into the lumen of the vessel (see Plate 11, Fig. 9) or into the lymph spaces and become free—the granular cell undergoes atrophy, and vessels may be found in densely sclerosed areas where the granular cells in the adventitial lymph spaces have given up their fat. Such cells remain in the adventitia as “ghost cells,” with shrunken nuclei and the remains of cell body and membrane, to increase the nuclear content of the adventitia. Through this process comparatively few of the large numbers of compound granular cells reach the surface of the cord, and the course of the vessels always shows a marked diminution of the dilated adventitial spaces near the periphery of the cord (Plates 12 and 13, Figs. 11 and 13). The cells as they reach the pia spread into the spaces of its inner layers—the spaces of the adventitia being continuous with the pial lymph spaces. It has been stated that no perivascular space can be

recognised in transverse sections of the cord. The cells fill out the spaces of the adventitia and separate its fibrils to so great an extent that the outermost layer of the adventitia is closely pressed against the *membrana limitans perivascularis*. Likewise, on the surface of the cord *no epispinal space can be recognised*, for the innermost layer of the pia, stained pink by Van Gieson's stain, can be found closely applied to the *membrana limitans superficialis* and distinctly within the layer of granular cells, filling the lymph spaces of the pia intima. Even in Marchi preparations it can be distinctly noted that the compound granular cells are spreading in the inner pial layers, not in an epispinal space. Such natural injections of the lymph spaces therefore lend no support to the view of the existence of perivascular and epispinal spaces. It should also be noticed, as a further important evidence of the non-lymphatic character of the so-called space of His, that in all the preparations in which there was natural injection of the lymphatics, where the process of fixation and hardening had produced a shrinkage space between the vessel and the surrounding nervous tissue, this space was invariably devoid of compound granular corpuscles. It is inconceivable that this could have been the case had His's space been really a lymphatic space.

With regard to the pericellular spaces, there is no corresponding natural injection by compound granular corpuscles. It is quite true that they may have in their neighbourhood one or more lymphoid corpuscles when the cells are in a state of degeneration, but it is not clear that these are lying in lymphatic spaces. There is no indication of any endothelial lining to the space outside the cell, and if the tissue has been carefully hardened by Zenker's method, no fissure will be seen. If the process of fixation has been imperfect, a space may appear either round the cell and its processes or in relation to part of it, but in such cases careful examination will show, in many instances, that the process of fissure formation has begun by rupture of the glial tissue immediately surrounding the nerve cell, and that a portion of its tissue has been left adherent to the nerve cell, with ragged threads projecting either into or across the fissure (Plate 10, Fig. 6). In our opinion the process of pericellular fissure formation is exactly analogous to that of the perivascular one. There is no more a space of Obersteiner than there is a

space of His. Both are artefacts due to imperfect fixation of tissue, aided frequently, no doubt, by pathological changes which render the glial tissue less resistant. In both instances the rupture is through the glial tissue, part of which remains attached either to the vessel or the cell, as the case may be. We are of opinion that there is but one set of lymphatic vessels, namely, the adventitial, which, obtaining its lymph supply either from the vessels or absorbing it from the nerve tissue, conveys it into the deep layers of the pia.

An examination of various cases of degeneration of the white matter shows that the main course of the lymphatic current goes towards the periphery of the cord. In the case of pernicious anæmia, which was the subject of most of the illustrations of this paper, sections stained by Marchi's method showed no evidence that the compound granular corpuscles were making their way either towards the central canal or the grey matter of the cord. The latter fact appears to us to be an additional argument in favour of the intimate relationship of lymphatic and blood vessel, as the vessels of the white and grey matter of the cord are almost entirely independent of each other. Therefore, in an involvement of the distribution of the vessels of the white matter, the lymphatics of the other area would remain unaltered.

In conclusion, briefly: Within the spinal cord there is no lymphatic epispinal space of His; there is no perivascular space of His; there is no pericellular space of Obersteiner. The lymphatic channels, as far as we know, follow the adventitia of the capillaries, veins, and arterioles towards the surface of the cord, where they enter into the deep layer of the pia mater, through which they probably communicate with the sub-arachnoid space. The lymphatic path has in the main an outward direction, but there is no doubt that it admits of a current inwards or of an invasion by cellular elements, micro-organisms and toxic substances.

POSTSCRIPT.

The distinctive note of Dr Bruce's more recent work in the laboratory may be said to be the emphasis which he placed on the share taken by the lymphatics in the processes of disease in the nervous system. This attitude dominated work done on various subjects which had at first sight seemed somewhat uncon-

nected. The manner in which these were attacked afforded a good example of the untiring patience with which, step by step, Dr Bruce carried on investigation. To him, too, there came the inevitable reward of such research. For there were times when those who worked under him in the laboratory seemed to share with him, and have their enthusiasm kindled by, the clear view which he possessed of fundamental and ultimate truths. They then recognised how he had long before seen the far-reaching significance of the smallest detail, and had patiently related all the details to one another and brought them to a focus. He hailed with the greatest delight each new observation that seemed to realise his premonitions, and we felt we had been in contact with a man whose work had let a ray of light into a dark place. As he told us of his thoughts, there was a significance in his words which the words alone did not, and could not, express.

Those who were associated with Dr Bruce in the laboratory seemed to realise that he had not fully developed his views on the rôle of the lymphatics in the nervous system. He was satisfied that the lymph has a to-and-fro flow. The lymphatic path might thus be the path of an entering infection, as it is the path of removal of metabolic and degenerated products from the tissues; while, as a result of the irritation of the pathogenic agent on the one hand, or of the distension of the lymph-spaces with cells laden with degenerated products on the other, a fibrosis of the adventitia might occur causing occlusion of the lymph path and a consequent lymph stasis and œdema.

The foregoing paper was the first of a series in which Dr Bruce hoped to elaborate this position and bring to maturity his views. He had given special attention to the conditions under which a natural process of injection of the lymphatics takes place, and had found that it occurred in every case in which a slow degeneration of the myelin is going on. The preparations described in the paper were taken from segments of the cord immediately above and below the lesion in a case of rupture of the cord, with long-continued compression and from the sub-acute combined degenerations present in the cord in a case of pernicious anæmia. Similar marked distension of the adventitial lymph spaces by compound granular cells was noted in cases of disseminated sclerosis, amyotrophic lateral sclerosis, Friedreich's ataxia, tabes, and hemiplegia. As long as decay of the nerve

fibres lasts, fat granule cells are found in the tissue spaces and in the lymph sheaths of the vessels. The removal in the lymphatics is evidence of an active resorption, and its commencement may be looked upon as initiating the process of repair and substitution.

As an illustration of the invasion of the nervous tissues by micro-organisms entering by the adventitial lymphatics, may be taken the case of acute hæmorrhagic meningitis due to anthrax, reported by Dr Bruce and Dr Shennan in this *Review*, Vol. viii., 1910, p. 521. Numerous anthrax bacilli were found in the soft membranes of both the brain and spinal cord and passing along the adventitial lymphatics of the vessels of the anterior longitudinal fissure and posterior nerve roots. Isolated bacilli were also noted in the tissue spaces of the anterior horn of grey matter, but in no instance were bacilli found actually within the vessels of the cord, nor in the so-called perivascular lymphatics. The presence of the organisms in the adventitial sheath of the vessels, and their entire absence within the lumen, are facts of very great significance. Fig. 15 (Plate 14) shows anthrax bacilli in the adventitia of the anterior central artery at the base of the anterior median fissure.

A further interesting illustration of the relationship of the lymphatics was communicated to the Pathological Society of Great Britain and Ireland at Bristol in July 1910, under the title, "A Case of Multiple Neuromata in the Central Nervous System." Neuromata presenting somewhat the characters of amputation neuromata were found in great abundance in the anterior cornua, and in the antero-lateral columns of the cord of a woman who died at the age of thirty of a progressive spinal disease, which began at the age of ten. The neuromata consisted of a fine felt-work of medullated nerves, partly in more or less spherical or fusiform masses, partly of more irregular shape. In all instances the nodules lay within the adventitia of blood vessels. In many cases they could be traced to fibres entering along the anterior central artery, in others to the vessels entering from the periphery of the antero-lateral columns. The source of these was apparently anterior root fibres whose course had become misdirected through a sclerosing process affecting the pia mater, especially in the neighbourhood of the anterior roots. This process had spread along the adventitia of nearly all the

vessels of the antero-lateral part of the cord and to a lesser extent those of the posterior columns in certain areas. The posterior roots were similarly compressed by the sclerosing tissue, without apparently giving rise to aberrant fibres. Fig. 16 (Plate 14) shows nerve fibres contorted in an irregular manner, and finding a channel for growth within the adventitial lymph spaces of the anterior central artery. Fig. 17 (Plate 14) shows a nodule composed of interlacing nerve fibres which have entirely filled and distended the adventitial lymph spaces. The nodule is surrounded by the thickened outer wall of the adventitia which limits it from the surrounding nervous tissue.

The subject to which Dr Bruce directed chief attention during recent years was that of disseminated sclerosis. He was one of the first to point out that in numerous cases the perivascular localisation of the plaques (Plate 15, Fig. 18) is the most important lesion and frequently dominates the macroscopic and microscopic pictures. He early recognised that ependymal and peri-ependymal lesions lead to important considerations, especially from the manner in which the toxic or infective agent acts. The interpretation of this localisation was not easy, but, as the rich vascular supply of this region and the markedly altered vessels, especially at the frontal and occipital horns of the lateral ventricle (Plate 15, Fig. 19), seemed to him to indicate that the causal agent entered along the lymphatics in the perivenous sheaths, he admitted in principle that the cerebro-spinal fluid may be its vehicle. The cerebrum and cerebellum, owing to the independence of the arterial and venous paths, are well adapted to give an idea as to the mode of formation of the plaques. Within the cerebrum the veins pass towards the wall of the ventricles and the choroid plexus towards the veins of Galen, and have in this way a distribution altogether different from that of the arteries. The same is true of the cerebellum. A study of a series of sections shows that the plaques are deposited in relation to the distribution of the veins and to the walls of the ventricles. An examination of sections of the cerebral hemispheres, pons, cerebellum, and medulla, suggested most emphatically that the infiltration is along the lymphatic channels surrounding the veins. In the cord the tendency is to pass inwards from the meninges in a more or less wedge-shaped form, the relation of the plaques to blood vessels being often difficult

to trace except in the early stages. Dr Bruce argued that the evidence of the disease being so marked round the ventricles raised the possibility of the cerebro-spinal fluid containing toxic agents, but also that possibly as important was the dissemination of the causal agent by the blood channel. One of the difficulties in the way of coming to any definite conclusion as to the share taken by each was the inability to satisfy himself as to the structures which contribute to the elaboration of the cerebro-spinal fluid.

Dr Bruce strongly supported the view of the perivascular distribution of the plaques, but as the lymph channels accompany the blood vessels this distribution could be explained from either standpoint. In his experience the presence of a vessel, cut transversely or longitudinally, placed centrally or eccentric, was so constant that it could not be overlooked (Plate 16, Fig. 20). By means of serial sections it could be proved that the areas closely corresponded to the branchings of the vessel. The plaques, wherever they are situated, are distributed evidently without any relation to nerve tracts. Their character and appearance and delimitation suggest a gradual infiltration from some central source into the surrounding tissues (Plate 16, Figs. 20 and 21). If the infective agent is carried by the blood the very smallest vessel alterations must always involve changes in the transudation or lead to pathological exudations. This disturbed lymph circulation expresses itself in characteristic serous infiltration of the parenchyme with distension of the glia meshes and, through an extensive lymph congestion, brings about the extreme dilatation of the adventitial lymph spaces. This toxic lymph probably directly affects first the adjacent myelin substance, and secondarily, flowing in the adventitial lymph spaces, induces proliferative changes there which result in a fibrosis with consequent occlusion of the lymph path. This occlusion then tends to cause a stasis of the lymph in the tissue which completes the degeneration of the nerve fibres and the proliferation of the glia. It was in relation to this mechanism of lymph block that special attention was paid to the presence or absence of the perivascular lymph space. In a vessel with fibrosis of its adventitial sheath there is no lymph circulation, but if both adventitial and perivascular lymph paths are present the occlusion of the adventitial spaces would not have resulted in

lymph block. It will be noted that whether the noxa is carried by the blood stream and escapes into the tissues by direct transition through the adventitial lymph spaces, or whether it is carried directly inwards from the lymph bathing the brain and cord and their membranes in the adventitial lymphatics, the result on the vessel is the same. In the early plaques we have the marked increase in the cell elements of the adventitia, the dissociation of its fibrils, and distension of its lymph spaces (Plate 16, Fig. 20): in the older plaques marked thickening of the vessel walls, sometimes accompanied by hyaline degeneration of the media and slight infiltration of the adventitia with lymphocytes and plasma cells (Plate 16, Fig. 22). Dr Bruce was thus absolutely convinced of the toxi-infective nature of the process and that the plaques were caused by a gradual infiltration of the tissues with toxic lymph spreading from a central focus until it exhausts itself.

This attempt to outline Dr Bruce's views regarding the pathogenesis of disseminated sclerosis is made with the consciousness of the impossibility of stating his position with any completeness and with the conviction that he would certainly for some time not have committed himself to any definite explanation. The expression of his views was accompanied at times by a certain reticence, as if the most important questions remained unanswered, but the impression was always conveyed that there still remained an unexhausted field of research, and that the lines to be followed in opening this up could not as yet be clearly formulated. It almost seemed that to him the solution were an accepted certainty though he knew that he had yet much to work out to prove it.

REFERENCES.

1. Arndt. Quoted by Borst, p. 107.
2. Borst. "Die multiple Sklerose des Zentralnervensystems," *Ergebnisse der Pathol.* (Lubarsch u. Ostertag.), 1903, Jahrg. IX. 1, S. 67.
3. Friedmann. Quoted by Ranke, p. 281.
4. His. "Über ein perivaskuläres Kanalsystem in den nervösen Zentralorganen und über dessen Beziehungen zum Lymphsystem," *Ztschr. f. wissenschaft. Zool.*, Leipzig, 1865, Bd. xx., S. 128.
5. Kattwinkel. Quoted by Schmaus, S. 329.
6. Nissl. "Vorlesungen über die patholog. Anat. des Rückenmarks" (Schmaus-Sacki), *Centralbl. für Nerven- u. Psychiat.*, Coblenz u. Leipzig, 1903, S. 88.

7. Obersteiner. "The Anatomy of the Central Nervous Organa," 1900, p. 174.

8. Orr. "A Contribution to our Knowledge of the Course of the Lymph Stream in the Spinal Roots and Cord," *Rev. Neurol. and Psychiat.*, Edinburgh, 1903, vol. i., p. 639.

9. Orr and Rows. "Toxic Infection of the Central Nervous System," *Rev. Neurol. and Psychiat.*, Edinburgh, 1907, vol. v., p. 345.

10. Ranke. "Beitr. zur Lehre von der Meningitis tuberculosa," *Histolog. und Histopath. Arbeiten* (Nissl), 1908, Bd. ii., S. 252.

11. Schmaus. "Acute Myelitis," *Ergebnisse der Pathol.* (Lubarsch u. Ostertag.), 1903, Jahrg. IX. 1, S. 313.

12. Schmaus-Sacki. "Pathologische Anatomie des Rückenmarks," Wiesbaden, 1901, SS. 246 and 429.

13. Schroeder. "Einführung in die Histolog. u. Histopath. des Nervensystems," Jena, 1908, S. 40.

DESCRIPTION OF PLATES 9-16.

PLATE 9.

Fig. 1.—Transverse section of three small vessels; distension of their adventitial sheaths, with compound granular corpuscles. Zenker fixation. Van Gieson's stain. ($\times 400$.)

Three capillaries are seen surrounded by a closely compacted number of compound granular corpuscles. These are enclosed by the outer layer, stained pink, of the connective-tissue wall of the adventitia. No perivascular space is seen anywhere. Within the adventitia connective-tissue cells are seen between the granular corpuscles.

Fig. 2.—Minute capillary transversely divided: adventitial sheath distended by a single ring of compound granular corpuscles. Note pink outline of adventitia immediately adjoining glia tissue, leaving no evidence of perivascular space.

Note the glia cells and compound granular cells in the adjacent tissue. Van Gieson's stain. Zenker fixation. ($\times 500$.)

Fig. 3.—Transverse section of a slightly larger capillary surrounded by ring of compound granular corpuscles enclosed within the adventitia, which is limited by a pink line of connective tissue. On the left of the vessel is seen a shrinkage space formed by the artificial separation of adventitia and glia. This is the space commonly described as the perivascular lymphatic. Van Gieson's stain. Zenker fixation. ($\times 500$.)

PLATE 10.

Fig. 4.—Small venule cut longitudinally, showing adventitial sheath distended with numerous nucleated elements. Note the complete absence of these from the space (shrinkage space) lying outside the vessel. Van Gieson's stain. Formalin fixation. ($\times 200$.)

Fig. 5.—Longitudinal section of venule showing the formation of the perivascular shrinkage space. Tags and filaments of glial tissue are seen adhering to the outer layer of the adventitia of the vessel. The outer wall of the shrinkage space is similarly found. Van Gieson's stain. Formalin fixation. ($\times 320$.)



FIG. 2

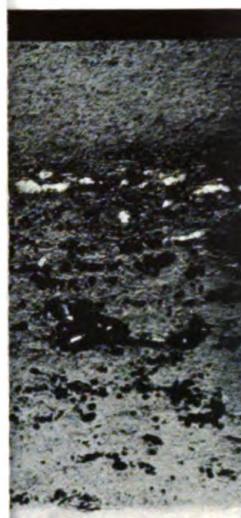


Fig. 8

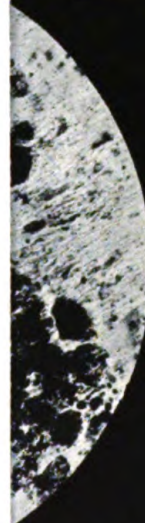


Fig. 9

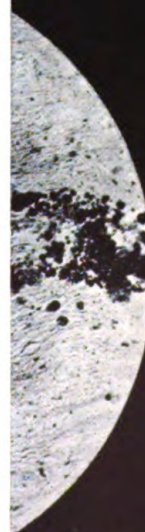


Fig. 10

7. Obersteiner. "p. 174.
8. Orr. "A Cont Stream in the Spinal F 1903, vol. i, p. 639.
9. Orr and Rows. *Rev. Neurol. and Psych*
10. Ranke. "Bei und Histopath. Arbeit
11. Schmaus. "Ostertag.), 1903, Jahrg
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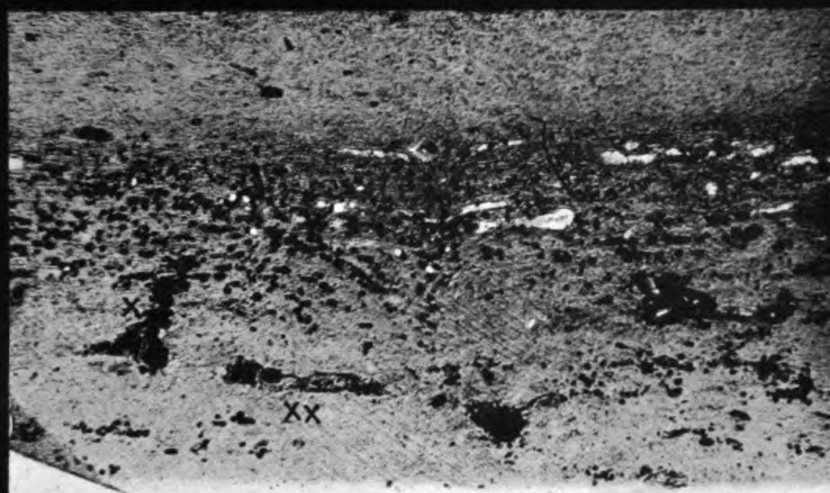


Fig. 8

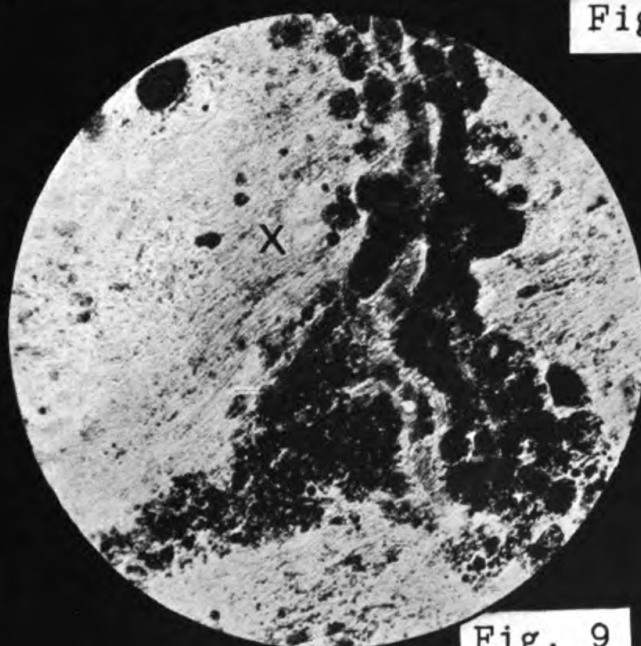


Fig. 9

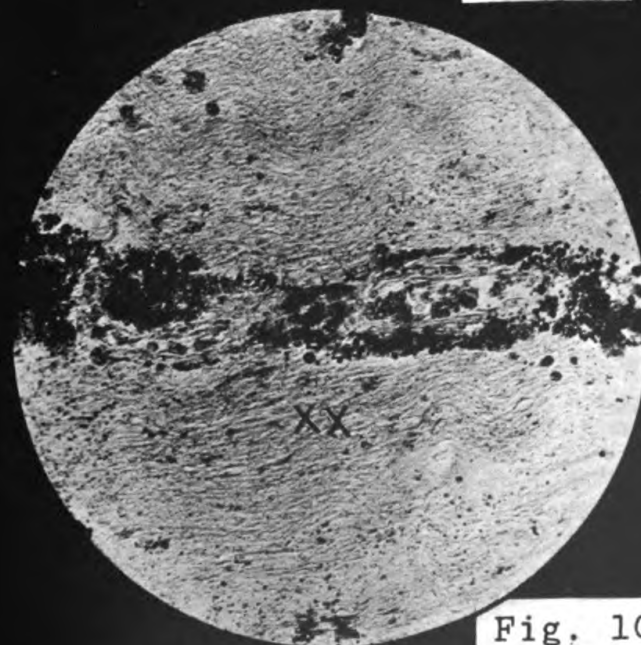
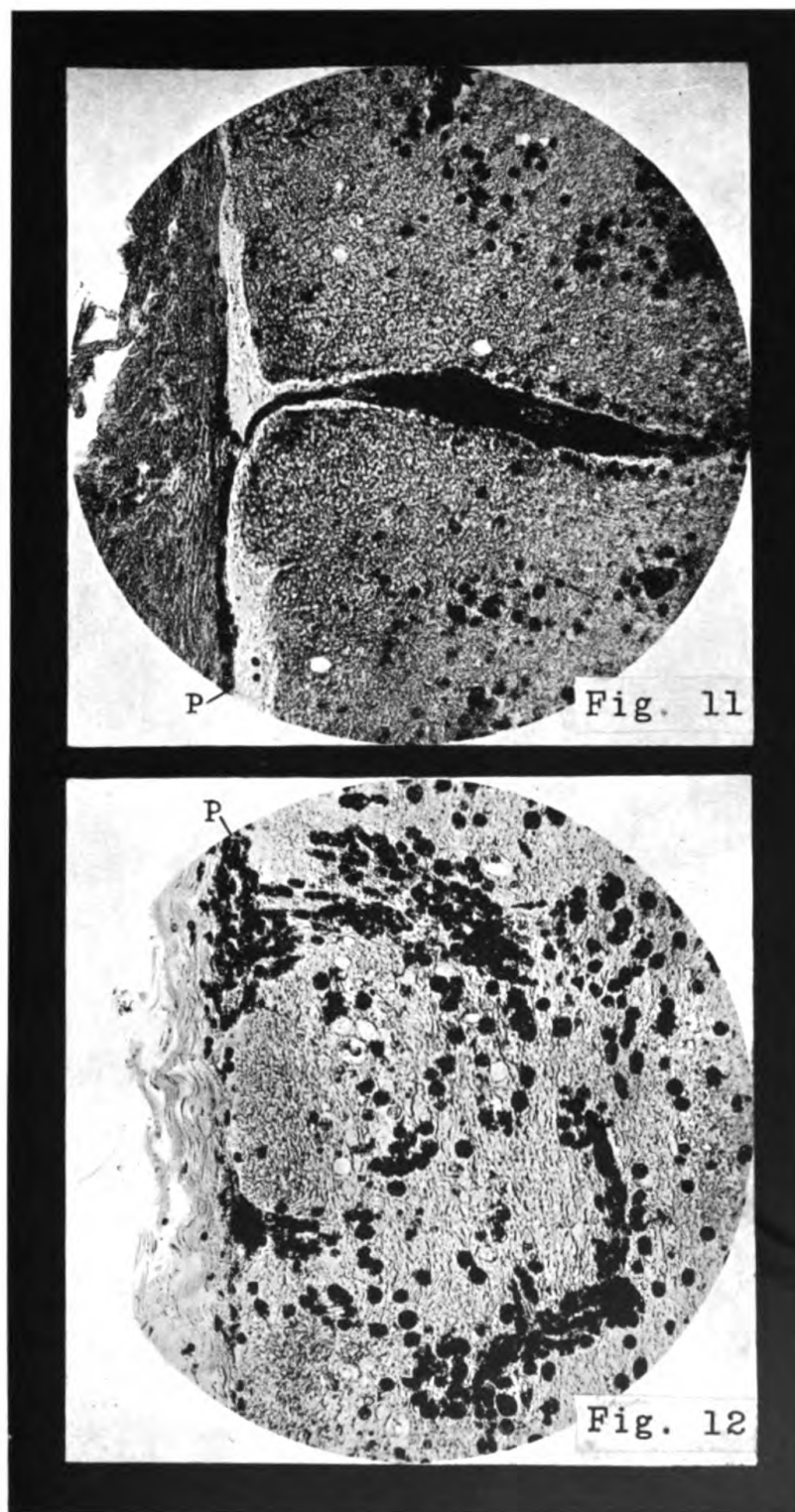


Fig. 10



To illustrate Paper by Dr Bruce and Dr Dawson.

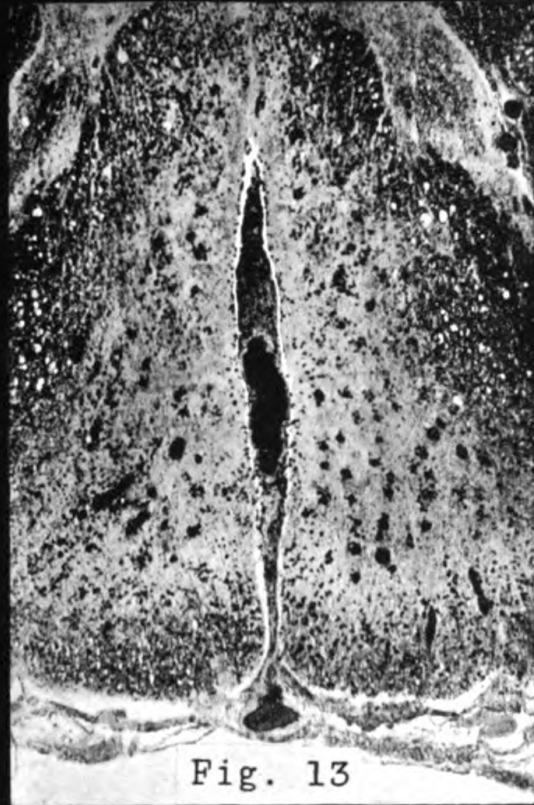


Fig. 13

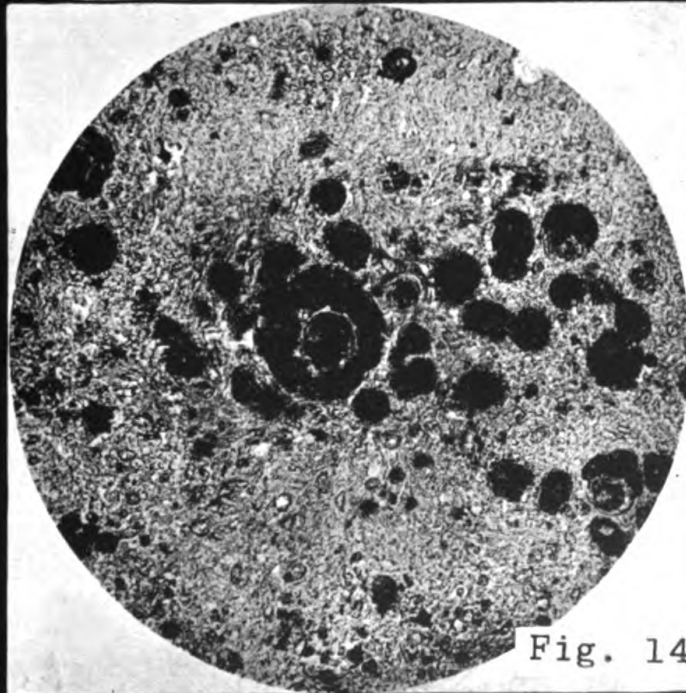


Fig. 14

To illustrate Paper by Dr Bruce and Dr Dawson.

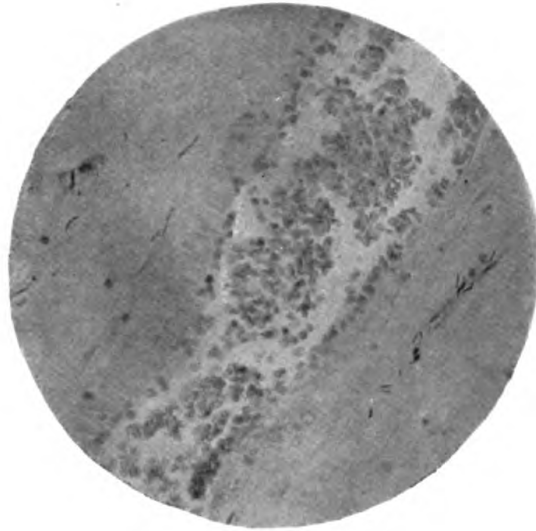


FIG. 15.



FIG. 16.



FIG. 17.

To illustrate Paper by Dr Bruce and Dr Dawson.

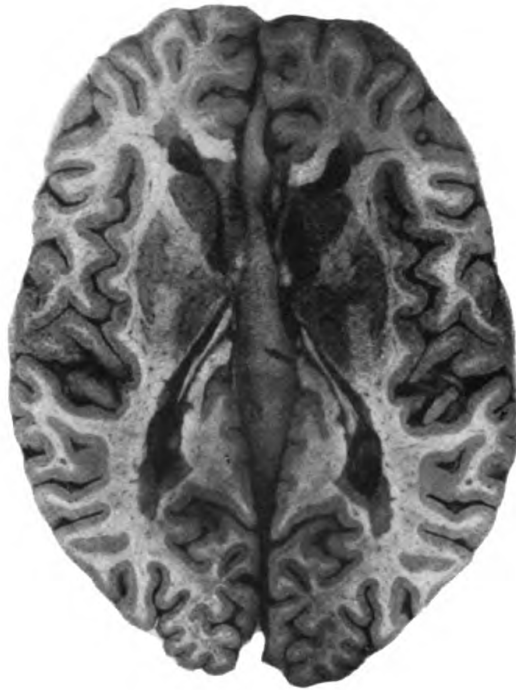


FIG. 18.

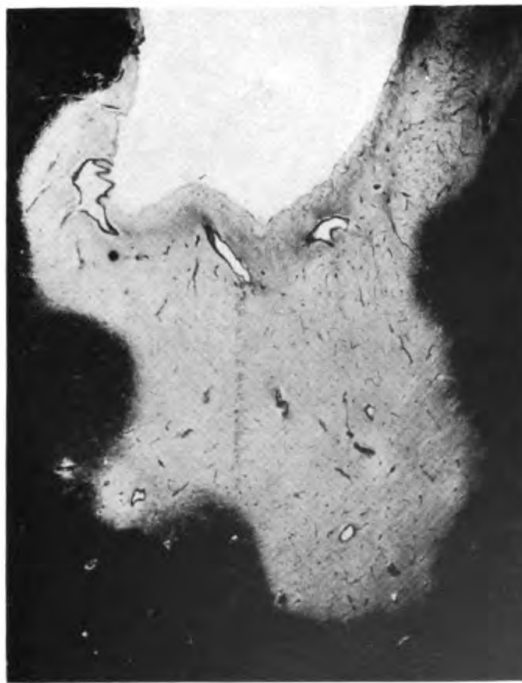


FIG. 19.

To illustrate Paper by Dr Bruce and Dr Dawson.

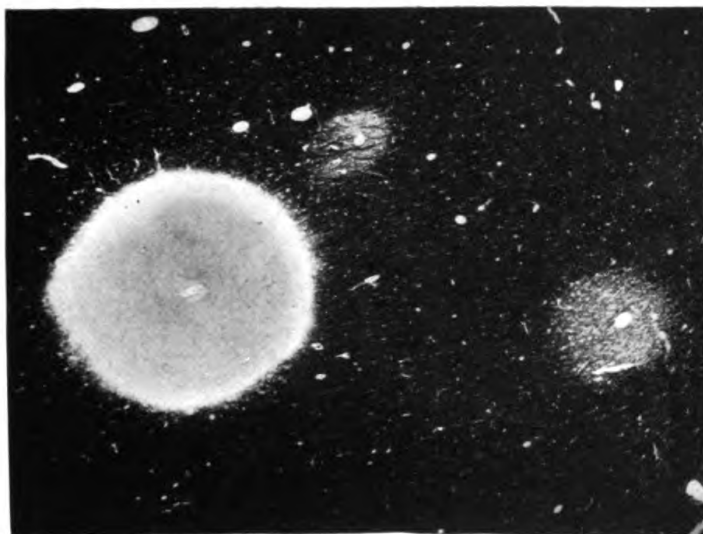


FIG. 20.



FIG. 21.

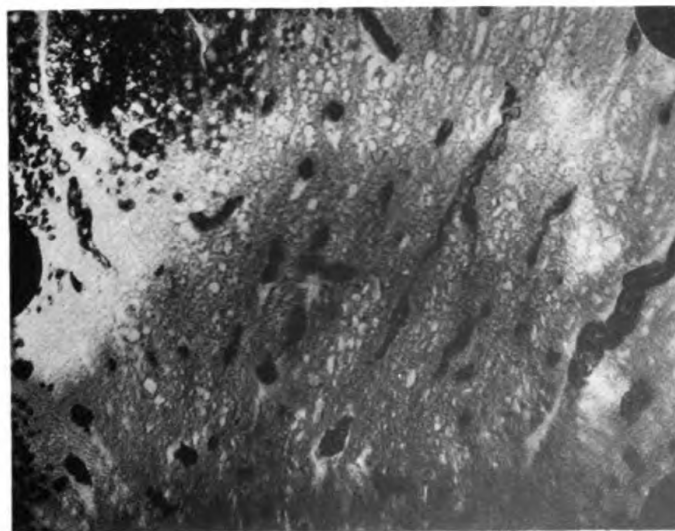


FIG. 22.

RELATIONS OF LYMPHATICS OF SPINAL CORD 365

Fig. 6.—Shows early stage of development of a pericellular shrinkage space. Fine fibrillæ of glia are seen passing over the space to the body and processes of the cell. Formalin fixation. ($\times 500$.)

Fig. 7.—Section of pia mater, surface of cord, and entering vessel, showing the close adhesion of the inner layer of the pia to the condensed layer of the glia—*membrana limitans superficialis*—and the complete absence of any epispinal space. Van Gieson's stain. Zénker fixation. ($\times 320$.)

PLATE 11.

Figs. 8-14.—Marchi sections from case of pernicious anæmia.

Fig. 8.—Longitudinal section of lateral column of cord. The compound granular corpuscles, stained black, form interrupted longitudinal lines leading towards, and surrounding, the capillaries. ($\times 40$.)

Figs. 9 and 10, corresponding respectively to \times and $\times \times$ of Fig. 8, but magnified 250 and 200 times, show the extensive infiltration of the adventitia with the compound granular cells and free granules of fat.

PLATE 12.

Fig. 11.—Margin of cord with pia showing a peripheral vessel carrying compound granular corpuscles in its adventitial wall towards the deep layer of the pia mater, and within which they spread in both directions. Note the narrowing of the stream of corpuscles as the surface of the cord is approached. ($\times 70$.)

Fig. 12.—Longitudinal section showing how the compound granular corpuscles approach and enter the adventitia of the vessels, and spread in the deep layers of the pia. ($\times 70$.)

PLATE 13.

Fig. 13.—Transverse section of posterior columns of cord showing early degeneration in the outer zone, and more advanced change in the inner zone, where the black staining is restricted to the periphery of the vessel wall. The paler appearance of the inner zone is due to the compound granular corpuscles having been drained from the tissue along the adventitial lymphatics. ($\times 30$.)

Fig. 14.—Transverse section of capillary showing a ring of compound granular corpuscles in its adventitia, and the approach of the cells in the tissue towards the vessel. ($\times 250$.)

PLATE 14.

Fig. 15.—Acute hæmorrhagic meningitis. Anthrax bacilli in the adventitial lymph spaces of the anterior central artery. Gram's stain. ($\times 300$.)

Fig. 16.—Neuroma of cord. Nerve fibres, contorted in an irregular manner, in the adventitial lymph spaces of the anterior central vessels at base of anterior median fissure. Kulschitzky-Pal and picro-fuchsin. ($\times 70$.)

Fig. 17.—Neuroma of cord. Nodule composed of interlacing nerve fibres with neurilemma nuclei. Note the central vessel and that the outer thickened wall of the adventitia completely encloses nodule. Van Gieson's stain. ($\times 180$.)

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PLATE 15.

- Fig. 18.—Disseminated sclerosis. Horizontal section through cerebral hemispheres showing marked periventricular sclerosis. The frontal and occipital horns surrounded by a hood of sclerosed tissue.
- Fig. 19.—Disseminated sclerosis. Occipital horn of lateral ventricle with hood of sclerosed tissue. Note the thickened sub-ependymal vessels and the numerous thickened capillaries. Kulschitzky-Pal. ($\times 10$.)

PLATE 16.

- Fig. 20.—Disseminated sclerosis. Three early plaques—each with central vessel. In the largest plaque note the sharp delimitation and complete solution of the myelin. In the two smaller plaques commencing solution of the myelin. Kulschitzky-Pal. ($\times 13$.)
- Fig. 21.—Disseminated sclerosis. Early changes in central vessel in a commencing plaque, similar to the two smaller plaques in Fig. 20. Note the separation of the fibrils of the adventitia, the distension of its lymph spaces, and the increase in its cellular elements. Kulschitzky-Pal. ($\times 200$.)
- Fig. 22.—Disseminated sclerosis. Very thickened vessels in area of dense sclerosis. Kulschitzky-Pal. ($\times 70$.)

ON THE RECKONING TEST AND ITS USES IN PSYCHIATRY.

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OF the many brilliant ideas which have emanated from the school of experimental psychology, so illustriously directed by Professor Emil Kraepelin, the reckoning test is one of the most practical. A simple test was needed to afford an index to working intellectual capacity. As it had to be available in mental cases, novelty had to be avoided in its choice; for an insane person might well be able to perform a simple task, the mechanism of which was already part of his experience, but yet, quite unable to grasp an entirely new task to which his existing associations were only an indirect guide. So an exercise was selected which fell within the daily life of everyone, an exercise fixed by the repeated associations of years—the exercise of

counting. Simple addition was chosen. Axel Oehren (1) arranged the first reckoning test, which he described thus:—"I used the figures from 1 to 9, and tried carefully to observe two precautions: first, to avoid repetition as far as possible; and second, to obtain all possible successive combinations excepting those which yielded the sum 10. For such a combination, even when a special effort singly to add the digits was being made, as we found from experience, was always perceived and reckoned in conjunction with the next figure. The number of possible combinations was in consequence curtailed and the frequency of recurrence of the combinations used was increased, but, as my experiments have shown, to such a slight extent as has no practical significance."

"The test," says Professor Kraepelin (2), "consists in adding each successive figure with the greatest possible rapidity to the sum of the preceding. The simultaneous addition of more than one digit to a partial sum must be avoided. On account of the tendency which exists to reckon in groups, the rows of figures are kept covered and only the digit which for the moment has to be dealt with is displayed. As soon as the sum reaches or exceeds 100, the 100 is allowed to lapse, and the addition is continued, using any superfluous units as the nucleus of the next sum total." Thus if the sum of the preceding figures in a column were 93, the addition would proceed as follows:—

	93	
4	97	$93 + 4 = 97$
2	99	$97 + 2 = 99$
9	8	$99 + 9 = 108$
6	14	$8 + 6 = 14$

The aim of the test was the discovery of the maximum number of separate acts of addition of which a person was capable in a given time. Each act represented a unit of mental work (3). "The printed digits in the test have to be perceived, but this is affected so extraordinarily quickly . . . that it does not measurably influence the duration of the task. In proportion to the time occupied by the mental processes of addition, the mechanical work of writing has only a short duration, which, further, has been experimentally shown to be so utilised for the carrying out of the next addition that under no circumstances

does it appreciably prolong the time required for any single act." The total number of sums completed therefore afforded an index to the mental working capacity within the time tested, and the average duration of the association processes involved in each single act of addition could be readily calculated. In a particular experiment (4), during one series of successive quarters of an hour, 196, 198, 201, 205, 212, and 201 separate acts of addition were achieved. As Oehren systematically arranged the figures for the purpose of rendering the difficulty of the task uniform, alterations in the rate of work arose from mental changes. The progressive increase of the mental product in the early intervals was shown by Amberg (5) to be due, at least in part, to the overcoming of mental inertia¹; and the diminution in the number of units in the last fifteen minutes was proved to arise from fatigue.

Kraepelin and Emil Hoch (6) employed the new method of investigation in their classical experiments on the action of tea. But the adding of each successive digit to the partial sum was presently relinquished in favour of adding the figures only in pairs. This modification had the great advantage of involving only small totals, of calling into action, therefore, only the simplest of mental processes. The quality of work required throughout the test was thus rendered still more uniform, and its performance was brought more completely within the sphere of subsequent analysis. But, whereas in the earlier method the number of sums, the number of separate mental acts, might total 200, it was now found frequently to exceed 1000. With the original method there had been no doubt that the mental was the essential element in the task. But with the new method the question of the possible influence upon the number of sums done, of the fatigue of writing, at once arose. "In my experiments," says Leowald, "I had repeatedly the experience that my hand, fatigued from writing, compelled me to work more slowly than I could have done if I had not needed to write" (7). Could the results of the test no longer be regarded as a measure of the mental working capacity? Leowald compared in six persons the rates for merely copying, as well as for adding the digits in pairs. The following is a

¹ *Anregung*, variously translated as incitation, psycho-motor inertia, warming to work, getting under way.

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table of his results ; the results of L. are the average of eight tests, the results of the others, of four :—

			Number of Digits in One Hour Copied.	Number of Pairs in One Hour Added.
Herr R.	.	.	5827	4686
„ J.	.	.	5466	4423
„ I.	.	.	5654	4277
„ G.	.	.	5226	3968
„ K.	.	.	3946	2620
„ L.	.	.	5654	5600

The case L. proves conclusively that, in some persons at any rate, when the experiment is prolonged, the test may be a very doubtful index to the duration of the mental processes. But such heroic tests of endurance, as adding or writing as rapidly as possible for a whole hour, cannot be adduced as evidence of the relation of the factors at work in the short periods for which the test is employed in psychiatry. To expect to maintain the interest at the maximum possible level in such a simple, monotonous procedure as adding figures in pairs for an hour is indisputably hopeless, and the sum totals obtained from such a task, at most, measure merely the compromise between the capacity, the attention, and the fatigue. Professor Kraepelin has made characteristically thorough investigations of this question, and he holds that in the new, as in the old method, the time spent on the muscular act of writing is negligible, and that the duration of the test may be regarded as essentially controlled by the speed of the association processes. My personal experience of the test in over fifty individuals has been in accord with Professor Kraepelin's. The time when muscular fatigue develops varies in different people, but for times shorter than that which causes fatigue the writing process is largely automatic and synchronous with the uninterrupted procession of associations involved in the acts of addition. In any mental case in which doubt exists as to the actual relation of the muscular to the mental element in the task, certainty can be attained by the simple expedient of copying. In copying, only one figure, the figure to be copied, requires to be perceived ; only one perception enters into each unit of work. In adding, the figures of each pair must be separately perceived. The speed of perception is,

however, so rapid that practically its duration is negligible; and the difference between the time required for a unit of the mechanical work of copying and that required for a unit of the mental work of adding arises from the duration of the association processes involved in the latter task.

For normal minds the test is considered by some psychologists to be too simple, too automatic. It has been elaborated in several ways: Rivers (8) described a new systematic arrangement of figures which he had devised for use as a test of the association processes in multiplication; Wimms (9) introduced into his experiments both subtraction and multiplication; and in Germany, Sommer and others have also modified it.

In its present form, as used in Professor Kraepelin's Klinik at Munich, the reckoning test consists of a book like the familiar school copy-book, containing in its twenty pages over 7000 digits. Every page has ten columns, each of 36 digits. To economise space and gently to complicate the task, the digits are added in pairs continuously, *i.e.* after a pair of digits has yielded a sum, the second digit of the pair is linked with the succeeding figure in the column to form a new pair. Each digit (excepting the first in the first column) is thus used twice, for the last digit of one column is paired with the first of the next. Thirty-six sums are thus obtained from each column of 36 digits. To minimise the effort of writing, to make the task as much as possible a measure of the mental and not of the muscular processes involved, if a sum amount to more than 9, only the unit is written; thus—

3		
7	3 + 4 =	7
4		
1	4 + 7 =	11
7		
3	7 + 6 =	13
6		
5	6 + 9 =	15
9		

The test is conducted as follows:—The patient is instructed in the method of continuous addition. A few seconds' warning is given, then the signal to start, and the test begins. The

patient adds the digits in pairs as rapidly as possible. At the end of each minute the examining physician calls "Stroke," the patient at once makes a dash under the last sum he has written, and then proceeds immediately with the addition. By counting the sums between the dashes, one can later ascertain how many sums were done in each minute. The test continues for fifteen minutes. The total number of sums is then estimated, the number of errors ascertained, and, if required, the curve of work from minute to minute plotted. Let us take an actual example from a test on myself:—Total number of sums, 1155; uncorrected errors, 4; corrected errors, 12; number of sums successively from the first to the fifteenth minute, 88, 83, 88, 70, 81, 80, 81, 81, 80, 80, 77, 77, 67, 64, 58. Now, on a piece of ruled paper, by marking the minutes along the abscissa and grading the ordinate from 50 to 90, we can plot the curve of the work throughout the fifteen minutes.

The total number of sums—the number of units of mental work accomplished in the prescribed period—depends on a great many factors. The tendency to spurting at the onset may swell the product, but this may be masked by the initial psycho-motor inertia. With normal subjects engaged in experiment the pervading interest of the research largely neutralises the intrinsic monotony of the task. With mental cases the same effect can be attained by a judicious appeal to the competitive instinct. But the task is essentially uninteresting; the incentive to maximum effort must come from the reckoner himself. Distractions are difficult to avoid; lapses of attention occur and the number of work units decreases. Again, spurts of application appear and the number once more mounts. And later, after a period of more or less maximum production, fatigue arises and the number of work units progressively diminishes.

But to the psychiatrist these transient variations are of the greatest interest, for if they are due solely to fluctuations in the mental processes, they will afford a valuable guide to the behaviour of the stream of consciousness. To what extent may they arise from inconstancy in the ease of the task? The ease of writing the different digits varies; the facility of writing is greater when the sums are at the top of a column—when the hand can rest on the book—than when they are at the bottom of a column; and, for the same reason, when the sums belong

to any other column than the tenth ; and the act of turning over a page also introduces a variation in the mechanical difficulty of the task. I have altered the form of the books, the width of the margins and the spacing of the columns, so as to minimise this mechanical factor of inconstancy.

No one can add with equal facility every pair of digits ; each pair ought therefore to recur with the same frequency : the arrangement of the figures in the present reckoning test is, I think, not calculated to yield the maximum possible amount of uniformity in this respect ; but I shall return to this point in a subsequent paper.

The effect of the timing, the extraneous stimulus of the calling of "Stroke," introduces another element of inconstancy. The person adding is made conscious of the flight of time : he can judge approximately how much work he has done in the last minute from the space between the two last dashes : and he may thus be urged to greater efforts. This result is best seen in the insane : some of them, when "Stroke" is called, write a few figures and then lapse into inaction ; each time the signal is given they awake from their apathy, are energetic for a moment, and then again become still : others, in a two-minute interval, I observed to write even as much as 30 per cent. less than in the two preceding and succeeding single-minute intervals : while others again suffered considerable distraction and confusion—the call of "Stroke" seeming to disorganise their "set" for the task.

The ideal test would have the figures in such a sequence that the difficulty of the actual task would be uniform ; and instead of the copy-book arrangement, the digits would be printed on a continuously running scroll whose rate could be automatically measured and regulated. With such precautions we could perhaps be enabled to interpret—what now eludes us—the true significance of many of the oscillations in the output. But the elaborate instrument necessary would be prohibitively costly, and the simplicity of the reckoning test, as it is at present constructed, very adequately compensates for this falling short of perfection. And as these oscillations are to a considerable extent mutually compensatory, the total of the fifteen minutes work affords a good approximation to the mental capacity.

The number of units of work done from minute to minute is at the mercy of so many factors that when a single-minute

work curve is plotted its irregularities tend to obscure the trend of the work curve as a whole. The effect of these disturbing factors is greatly minimised if intervals longer than a minute are plotted: for the longer the interval, the greater is the variety of the combinations added, and the greater is the number of different sums written; hence the more uniform becomes the ease of the task, and spurts and lapses of attention tend to neutralise each other. On such a curve—say a curve of the work done in three-minute intervals—the general features of the rate of the work—the initial speed, the time required for the attainment of the average working capacity, the height of the maximum output and its duration, and the onset and rapidity of development of fatigue—can be clearly demonstrated. When only the maximum output is desired, when only the greatest speed of the association processes is required to be measured, the influence of the initial spurt, of the getting under way, and of the onset of fatigue, are all avoided by estimating only the work done in the period from the beginning of the sixth to the end of the tenth minute—the middle five-minute period. The result thus obtained is very accurate, for it has been further proved that the tendency to spurts and to attention lapses occurs chiefly at the beginning and at the end of the task. The terminal slowing certainly arises from, but is a questionably exact measure of, the fatigue; for, as Dr Rivers (10) has pointed out, a balance may exist between effort and accomplishment which permits the work to go on at a more or less constant level, “corresponding perhaps to the constant level of the dynamometer method of studying muscular fatigue.”

We have so far discussed only the quantitative value of the test, its use as an index of the number of mental work units of which a person is capable. But there is still the question of the quality, the accuracy of the work. The origin of the errors and their significance was first briefly dealt with by Amberg (11). Our actual knowledge of them we owe chiefly to Kraepelin and Rivers (12); but much is still obscure regarding the mechanism of their production. Two classes of mistake are generally distinguished, the “writing” errors—due mainly to increased psycho-motor excitability causing false figures to be unconsciously commenced or even completed; and “thought” errors—arising from false associations. Or a division into corrected

and uncorrected errors may be made. The source of the corrected mistakes is rarely free from doubt; the digit may have been falsely begun or a merely purposeless stroke, arising from the attempt too hastily to write—an index of psycho-motor excitability—may have preceded the writing of the true sum: an altogether false sum may have been written, detected, and then altered; occasionally two corrections of a sum, rarely three, are made, and remain distinguishable; but often the initial error is illegible under the correction, and sometimes even the correction itself cannot be identified: or the sum may have been merely badly written and subsequently improved—a frequent source of apparently corrected errors in some persons.

Kraepelin and Rivers (13) calculated that of 68 uncorrected and 403 corrected errors which they analysed, 12·5 per cent. were “thought” errors, 55·4 per cent. “writing” errors, and 32·1 per cent. were indeterminable. The most frequent uncorrected error, they found, was the subtraction of a digit instead of its addition; this occurred in 21·32 per cent. of their uncorrected and in 10·92 per cent. of their corrected mistakes. The mere copying of one of the two summands instead of the writing of their sum was met with in 12·5 per cent. of uncorrected, 26·8 per cent. of corrected; no marked tendency was shown to select either the first or the second summand in this error. Instead of the proper sum, the sum of the two next digits was found in 10·30 per cent. of the uncorrected errors and in 8·19 per cent. of the corrected. The last sum was added to the following summand in 7·35 per cent. of the uncorrected and in 5·96 per cent. of the corrected. The addition of the newly written sum to the last used sum, and sundry other errors, accounted for the determinable remainder. They also considered the proportion of the corrected to the uncorrected errors, the relation of the errors to the speed of the work, and to the improvement in the task which results from exercise. But their experiments were conducted on persons whose minds were not merely normal but were of the very highest order. So I have given only a partial summary of their results, merely to show how the errors are to be examined, classified and estimated; for while I do not in the slightest impugn the accuracy of their results, I have not found them in harmony with those I have obtained in persons of more average intelligence and in the insane.

Persons, when adding, employ a number of different associations. Most people work mainly from internal figure associations fixed from the usage of years; but speech motor images, visual images, and motor images from the writing of the figures—all of which invariably enter into the process—in some enjoy, singly or in combination, an importance peculiar to the individual. Any or all of these factors may exert a correcting influence. The quicker the speed, the less can these correcting influences combine to ensure accuracy, and the greater is the total of the errors. In the insane, a thorough examination of the nature and frequency of the errors may not only be an important guide to the integrity of the fixed associations, but also to the mechanism which is at fault in allowing false associations to pass uncorrected.

To employ the test on a considerable scale, to use it as a routine method of investigation in mental work, is not difficult. Indeed, few tests involve such a simple technique; and it is remarkable how rarely patients are too ignorant or too demented to preclude its use. Only noisy patients need to be tested singly. The physician may investigate any convenient number simultaneously, more or less as a teacher would test a class. But it is advisable to work with as few at a time as is practicable, for if the physician takes notes from minute to minute of distractions, reveries, or other interruptions in the task which temporarily absorb the patients, he will be able later to interpret many of the irregularities in the work curve and to attain a much more satisfactory index to the actual state of the working intellectual capacity under investigation.

But to the busy asylum physician, whose days are filled by an inexorable routine, even such a simple mode of examination and research presents one great difficulty; the calculation of the totals, the estimation of the errors, and the reckoning of the rate per minute all seriously encroach upon his time. I have therefore simplified the calculation by arranging the figures in columns of twenty-one; in the method of continuous addition all except the first and last digits of each column are then used twice, so twenty sums result from each column; and, as there are ten columns on every page, each page of work can be at once taken to represent two hundred sums. The total work can thus be readily ascertained.

To facilitate the detection of errors I have prepared a key printed like the reckoning test but giving the sums only. Each column of twenty sums is printed on a separate slip; the slips are bound together at the top and a soft cotton band is interposed between them and the binding so that each slip when it is turned up falls over and lies flat; in number, order, and spacing the figures on each page of slips exactly correspond with the written sums which result from the continuous addition of the digits on the corresponding page of the reckoning test; between each page of slips a sheet of blank paper is inserted to prevent confusion arising from the intermixing of the slips; the key can be obtained printed either on indestructible or on ordinary paper.

With such a key the finding of the errors can be safely entrusted to the more intelligent of the patients without fear of fatiguing them or of errors passing undetected. To discover the errors all that is required is to allow the appropriate slip of printed answers to lie alongside the row of written sums to be examined; a glance reveals any lack of correspondence between the printed and the written columns of sums: the errors are marked; that slip is turned up; and the next is placed parallel to the next written column.

Kraepelin and Rivers described the characteristics which could be distinguished in the results of the reckoning test in the following five normal mental conditions:—

1. *Intellectual Freshness*.—Marked initial spurt; rapidly developing incitation; average amount of work and of mistakes; after half an hour's work no falling off in the production; end spurt.

2. *Lowered Excitability*.—Trifling and gradual increase of the work done; feeble spurt; slow incitation; late attainment of the maximum; no diminution after half an hour's work; end spurt; few mistakes.

3. *Inattention*.—Fairly small total; tendency to spurt; delayed incitation; no terminal spurt; total of errors increased.

4. *Tiredness*.—Amount of work small from the commencement, and diminishes; tendency to spurting; delayed incitation; terminal spurt frequently absent; maximum production near the beginning; errors fewer.

5. *Impatience and Boredom*.—Average production; no spurts, or at most only occasional, at the end; mistakes in the

writing of the sums usually increased but usually corrected; few errors arising from false associations.

If such characteristic effects can be observed in normal mental conditions—conditions which are seldom distinct or uncomplicated—how much more striking would be the results of investigation of morbid mental states? The information afforded by the routine application of such a test would not fail to be of diagnostic value in most mental diseases, especially in the differential diagnosis of hysteria, neurasthenia and malingering. Its employment periodically for a few days would afford an objective criterion of the progress of a morbid mental state such as melancholia. But more than this, the regular use of the reckoning test would provide a gentle mental task the dosage of which could be graduated like that of any other therapeutic measure. It would provide a nucleus around which a mentally affected patient could crystallise his faulty powers of attention and of will. Patients take a great interest in the test; the spirit of competition is often astonishingly keen among them, and the knowledge of their daily results urges them to greater efforts. The therapy of mental diseases cannot but welcome such a valuable accession to its strength.

REFERENCES.

1. Axel Oehren. "Experimentelle Studien zur Individual Psychologie," *Kraepelin's Psych. Arbeiten*, Vol. i., p. 101 *et seq.* Leipzig, 1896.
2. Kraepelin. "Ueber die Beeinflussung einfacher psychischer Vorgänge durch einige Arzneimittel," p. 6.
3. Kraepelin. "Der psychologische Versuch in der Psychiatrie," *Kraepelin's Psych. Arbeit.*, Vol. i., p. 14 *et seq.*
4. Kraepelin and Hoch. "Ueber die Wirkung der Theebestandtheile auf körperliche und geistige Arbeit," *Ibid.*, Vol. i., p. 431.
5. Amberg. "Ueber den Einfluss von Arbeits Pausen auf die geistige Leistungsfähigkeit," *Ibid.*, Vol. i., p. 336.
6. Kraepelin and Hoch. *Loc. cit.*
7. Leowald. "Ueber die Wirkung des Broms," *Ibid.*, p. 308 *et seq.*
8. Rivers. "The Influence of Drugs on Fatigue," p. 10. London, 1908.
9. Wimms. "Fatigue and Practice," *Brit. Journ. Psychology*, Vol. ii., 1907-8, p. 153.
10. Rivers. *Loc. cit.*
11. Amberg. *Loc. cit.*, p. 337 *et seq.*
12. Kraepelin and Rivers. "Ueber Ermüdung und Erholung," *Kraepelin's Psych. Arbeiten*, Vol. i., p. 656 *et seq.*
13. *Loc. cit.*, p. 662 *et seq.*
14. *Loc. cit.*

Abstracts

ANATOMY.

LOCALISATION OF THE MOTOR AREA IN THE SHEEP.

(345) SUTHERLAND SIMPSON and LUELLA KING, *Quart. Journ. of Exp. Physiol.*, Vol. iv., No. 1, March 1911, p. 53.

IN this paper a brief description of the general conformation of the sheep's brain is given, followed by an examination of the cortex for motor responses in the conscious animal under local anæsthesia. The authors locate the cortical motor area in the superior frontal convolution, extending antero-posteriorly from a line about 2 mm. in front of the cruciate sulcus behind, almost to the pole of the hemisphere, and latero-mesially from the coronal sulcus over the dorso-mesial border about 1 mm. on to the mesial aspect. It can be divided into four portions, which are, from behind forwards, centres for movement of the hind-limb, fore-limb, head and eyes, and face, mouth and tongue. The results of extirpation show that these cortical areas in the sheep are probably unimportant.

A. NINIAN BRUCE.

AN ANATOMIC STUDY OF THE FASCICULUS OCCIPITO-

(346) FRONTALIS AND THE TAPETUM. J. H. W. RHEIN, *Journ. of Nerv. and Ment. Dis.*, Feb. 1911, p. 65.

ON the basis of a review of the literature, and a case of hæmorrhage where the lesion cut partly through the tapetal fibres on one side, the author presents a detailed study of the questions indicated in the title. He concludes that the tapetum is part of an association bundle connecting the frontal and occipital lobes, though possibly it may also receive fibres from the corpus callosum. The fronto-occipital bundle sends some fibres across the knee of the corpus callosum to the corresponding contralateral bundle.

ERNEST JONES.

PHYSIOLOGY.

CONTRIBUTION TO THE STUDY OF THE "BROWN-SÉQUARD"

(347) PHENOMENON. (*Contribution à l'étude de l'hémilésion de la moelle épinière.*) GREIDENBERG, *Arch. de Neurol.*, mai 1911, p. 284.

THE author sums up the recent literature on the sensory tracts of the cord in their relation to the Brown-Séquard phenomenon. In Brown-Séquard's papers on the subject the fibres conducting *cutaneous sensibility* were believed to cross in the grey matter of the cord and go up on the opposite side; those conducting joint

and muscle sense to run up in the posterior columns on the same side, and to cross above the cord.

According to Seletsky and Bechterew the course of the fibres for *pain and temperature* is in Gower's tract. Thus lesions of the grey matter alone will produce segmental disturbances of sensibility to pain and temperature, whereas lesions of the antero-lateral white matter cause loss of sensibility to these stimuli over the whole surface of the body below the level of the lesion.

Piltz considers that there is for pain and temperature a second neuron, with its ganglion cell in the grey matter around the central canal.

Spiller found that pain and thermal sensations must pass in slightly different tracts, as one may be impaired without demonstrable loss in the other.

Tactile sensibility may run in the posterior column of the opposite side, but does not cross completely. Many authors agree with Lewandowsky that tactile impressions pass up both in the posterior columns of the same side and in the lateral columns of the opposite side.

Muscle sense probably passes up in the posterior columns of the same side.

Pressure sense (according to Resnikow and Josephwitch) also runs in the posterior columns of the same side.

Rothmann has thrown doubts on this comparatively simple explanation of the sensory tracts of the cord. According to him the sensory paths are—

Pain.—Mainly in the antero-lateral columns of the opposite side; partly in the anterior and posterior columns of the same side.

Thermal.—Almost entirely in the antero-lateral columns of the opposite side.

Tactile and pressure sense are not distinguished. They run in the posterior columns of the same side and the anterior columns of the opposite side.

Position.—Altogether in the tracts of the same side, mainly in the anterior, but also in the lateral and posterior columns.

J. GODWIN GREENFIELD.

PSYCHOLOGY.

SOME INSTANCES OF THE INFLUENCE OF DREAMS ON
(348) **WAKING LIFE.** ERNEST JONES, *Journ. of Abnorm. Psychol.*,
April 1910, p. 11.

It is probable that the content of dreams influence our waking states to a greater extent than is realised. Frequently neurotic

symptoms take their origin in a given dream. It is important, however, to recognise the fact that in no case is the dream the ultimate source of the mental process in question; the analysis is incomplete until the components of the dream itself are traced to their beginnings. Three illustrations are related.

AUTHOR'S ABSTRACT.

UNCONSCIOUS CHOICE OF SCIENTIFIC INVESTIGATIONS.

(349) (*Unbewusste Wahl wissenschaftlicher Untersuchungen.*)

ERNEST JONES, *Zentralbl. f. Psychoanalyse*, Bd. 1, Ht. 4, S. 166.

NOT only may such important decisions as the choice of a profession be determined by mental factors not realised by the personality, but the same principle applies to individual pieces of work in that profession, such as the interest leading one to undertake a given research. Two instances of this are here described.

AUTHOR'S ABSTRACT.

PATHOLOGY.

A STUDY OF THE CEREBRO-SPINAL FLUID. O. P. BIGELOW,

(350) *Amer. Journ. of Insanity*, April 1911, p. 745.

BIGELOW records the cell-count in a number of diseases from Friedreich's ataxia to uræmia. No new conclusions are drawn.

ERNEST JONES.

CLINICAL NEUROLOGY.

THE RÔLE OF DREAMS IN ETIOLOGY. DERCUM, *Journ. Amer.*

(351) *Med. Assoc.*, May 13, 1911, p. 1373.

THIS paper commences with a very lucid and fair summary of Freud's views on the subject of dreams.

The author takes exception to the idea that there is always a secret or sexual content in dreams, contending that this cannot be supported by common experience.

It is suggested that Freud's technique of psycho-analysis lends itself to a state of auto-hypnosis and hyper-suggestibility, and that the statements made under these circumstances are not reliable, and further, that the unpleasant personal and secret facts of the patient's history which are elicited would have come out in any case without reference to the dreams.

The therapeutic results obtained by psycho-analysis are attributed to suggestion, in that the patient commences the

séance in an expectant attitude, believing that the more revolting the disclosure the greater will be its power to cure.

These criticisms do not seem to do justice to the facts, of the frequency of self-deception as to motive in ordinary life, of the frequent occurrence of cases in which symptoms have an emotional value to the patient because of unacknowledged motives, and therefore of the necessity of some such method as that of "free associations" for bringing to light psychical facts which might never be elicited by direct questioning.

Only at the end of the paper is the etiological significance of dreams discussed, and the opinion advanced that dreams are symptomatic and never causal.

HAROLD CROSS.

CYSTOSCOPIC FINDINGS IN EARLY TABES. I. S. KOLL, *Chicago* (352) *Med. Reporter*, April 1911.

THE cystoscopic picture of the tabetic bladder resembles nothing else. Koll describes: (1) apparently for the first time, what he calls ureteral-orifice rigidity; here, instead of the rhythmical, sphincter-like action with each extrusion, one sees the urine flow without any evidence of muscular action; (2) a varying degree of hypertrophy of the inter-ureteric ligament; (3) fine trabeculæ, confined to the lateral walls. He never saw trabeculæ in the median line, in the fundus, or high up the lateral walls. Tabetic trabeculization is totally different from that seen in obstructive retention. A comparison with the findings of Barney (see *Rev. Neurol. and Psychiat.*, Feb. 1911, p. 77) shows that they agree as to the characteristic fineness of tabetic trabeculæ and their presence in the lateral walls, but differ concerning the fundus.

LEONARD J. KIDD.

ACUTE ANTERIOR POLIOMYELITIS IN THE ADULT. POLIO-
(353) **MYELITIS IN PREGNANCY.** (*Poliomyélite antérieure aiguë de l'adulte. Poliomyélite chez la femme enceinte.*) A. NETTER, *Bull. et mém. de la Soc. méd. des Hôp. de Paris*, 1911, **xxxi.**, p. 351.

A RECORD of 16 personal cases, 9 of whom were adolescents between fifteen and nineteen years of age, and 7 adults of whom the oldest was sixty-five. All but 3 were males. The course of the disease was the same as in children. In 7 the initial stage was accompanied by meningeal symptoms, so that the diagnosis of epidemic cerebro-spinal meningitis was first made. Three cases died—a mortality of 18.75 per cent.—as compared with a mortality of 6 per cent. in children.

Netter records a fatal case in a pregnant woman at term on whom the symptoms of poliomyelitis developed about three days before delivery, which was effected by forceps. Death took place from ascending paralysis, but the child survived. There are 6 other cases on record in which patients suffering from poliomyelitis gave birth at full term to children who showed no traces of paralysis. The disease therefore does not appear to be transmitted from mother to child in utero.

J. D. ROLLESTON.

ON GENERALISED HERPES ZOSTER. (*Zur Kenntniss des Herpes* (354) *zoster Generalisatus.*) G. NOBL, *Wien. klin. Woch.*, 1911, xxiv., p. 14.

A PREVIOUSLY healthy man, aged 74, had an herpetic eruption on the face, neck, trunk, and thighs following dorso-brachial zoster. Associated with typical vesicles were several abortive lesions. In some places the eruption assumed a hæmorrhagic and gangrenous character. Well-marked hyperalgesia was found in the left upper half of the body and in the left arm. The cerebro-spinal fluid was not examined. A review of the literature is appended (*cf. Review*, 1910, viii., p. 297, and 1911, ix., pp. 25 and 74).

J. D. ROLLESTON.

HERPES ZOSTER, ACUTE POLIOMYELITIS, AND ZINC (355) **PHOSPHIDE.** W. F. WAUGH, *Med. Record*, N.Y., May 27, 1911, p. 958.

WAUGH has since 1890 found zinc phosphide very efficacious in zoster. For an adult he advises not more than a centigramme one hour before meals. He favours free evacuation of bowels, and prefers gelseminine to morphine as a sedative in this group of acute, inflammatory, infective diseases. References given to the occasional epidemic and even endemic occurrences of zoster, as mentioned by the French school and others. Waugh draws attention to the comparative rarity of herpes in infants and young children: he quotes the recent work of Cruchet on this subject, and incidentally mentions the occurrence of herpes without eruption. He suggests a trial of zinc phosphide in acute poliomyelitis.

LEONARD J. KIDD.

FACIAL HEMIATROPHY. MOLEEN, *Journ. of Nerv. and Ment. Dis.*, (356) March 1911, p. 152.

THE author records a case of this nature having its onset at the age of six.

ERNEST JONES.

**A CLINICAL-ANATOMICAL CLASSIFICATION OF THE SENILE
(357) AND ARTERIO-SCLEROTIC DISORDERS.** C. I. LAMBERT,
Amer. Journ. of Insanity, April 1911, p. 769.

THE senile disorders are grouped as follows:—1. Senescence.
2. Senile dementia—(a) diffuse atrophy, (b) focal atrophy.
3. Senile dementia and arterio-sclerosis. The arterio-sclerotic disorders are divided according to the artery most implicated.

ERNEST JONES.

**DISTURBANCE OF SENSATION IN A CASE OF SYRINGO-
(358) MYELIA.** A. R. ALLEN, *Journ. of Nerv. and Ment. Dis.*,
Jan. 1911, p. 27.

AFTER discussing the problems of afferent impulses in relation to the spinal cord tracts, Allen briefly records a case of syringomyelia, in a man aged sixty-six, where the lesion had throughout the cervical and dorsal regions isolated the posterior columns from the rest of the cord. He infers that the pathway for tactile sensations, which were quite intact, lies in the posterior columns.

ERNEST JONES.

A CASE WHICH EXHIBITED THERMOMONESTHESIA NEW-
(359) MARK, *Journ. of Nerv. and Ment. Dis.*, Feb. 1911, p. 88.

THIS perversion of thermal sensation, which consists in the patient feeling as warm all stimuli of whatever temperature, has previously been described only in medullary lesions. The author records a case of syringomyelia in which it was well marked.

ERNEST JONES.

**A NEURO-EPITHELIOMA DEVELOPING FROM A CENTRAL
(360) GLIOSIS, AFTER AN OPERATION ON THE SPINAL CORD.**
SCHLAPP, *Journ. of Nerv. and Ment. Dis.*, March 1911, p. 129.

THE patient was operated on for a supposed extra-medullary tumour. At the autopsy the originally central gliosis, which had produced a syringomyelia, was found to have extended widely into both the white matter and the nerve roots. A tumour formation, destroying the cord, was present from the tenth dorsal to the second lumbar segments.

ERNEST JONES.

AN EXTRA-MEDULLARY TUMOUR OF THE SPINAL CORD, APPARENTLY CAUSED BY TRAUMA. BOVAIRD and SCHLAPP,
Journ. of Nerv. and Ment. Dis., April 1911, p. 221.

THE patient, a man aged twenty-one, was hurt in a game of football, and immediately felt severe pain between the scapulæ. This was the first symptom of a series that led to the diagnosis of extra-medullary tumour. The tumour, which was a perithelial endothelioma, was successfully removed. The authors attribute an ætiological significance to the injury. ERNEST JONES.

DELIRIUM TREMENS AFTER TRAUMA. (Ueber Delirium tremens nach Trauma.) MAXIMILIAN ROSENBERG, *Zeitschr. für die gesamte Neurol. und Psychiat.*, Bd. 4, Heft 2, Jan. 11, 1911, p. 217.

IN this paper the author describes in detail a case of delirium tremens following an injury, and discusses the question of the causal relationship between traumatism and the outbreak of delirium tremens. The particular case was, by reason of its freedom from complicating circumstances, a specially suitable example of the disease.

If there be a history of traumatism in a case of delirium tremens, we have in studying the above question to exclude the possibility that the trauma occurred in the prodromal stage of the disease, or was separated from it by an interval of time such as to make it illogical to draw any inference regarding their mutual connection. The nature of the traumatism is important. Injuries to the thorax and skull are of special significance; the latter as containing the brain, the former as excretory organs for the hypothetical metabolic poison of this disease. In the case of traumatisms of a different kind, such as can be supposed to have only a mechanical action and to be free of any effect on metabolism generally, or on the chemical processes going on in the brain, only an accurate analysis of the mode of operation of an injury, with the exclusion of all complications, can justify an opinion as to there being a connection between it and an attack of delirium tremens A. HILL BUCHAN.

THE RESULTS OF MEDICINAL TREATMENT IN 1106 CASES OF DELIRIUM TREMENS. S. W. RANSON and G. D. SCOTT,
Amer. Journ. Med. Sc., May 1911.

DELIRIUM tremens is stated to have two quite sharply defined stages: an incipient stage characterised by insomnia, restlessness,

tremor, and occasionally by hallucinations which are recognised as such, a later stage characterised by delirium and chiefly visual hallucinations.

The medicinal treatment of the condition is much more effective in the first than in the second stage. Incipient cases should receive large doses of the hypnotics, of which veronal is considered by far the best, whisky should be given regularly, and ergot should be administered at frequent intervals either by intramuscular injection or by mouth. Such medication should be discontinued gradually and only after all signs of restlessness and tremor have disappeared.

The delirious patient should receive veronal in moderate doses—all other hypnotics, and especially morphine and hyoscine, should be withheld. Ergot should be given as in incipient cases.

As regards delirious patients the data are not conclusive as to whether whisky should be employed or not.

D. K. HENDERSON.

**INEBRIETY: ITS COMMON-SENSE CONSIDERATION WITH A
(364) VIEW TO ELICITING THE CURE, PREVENTION, SUP-
PRESSION, AND FINAL ERADICATION. DE LANCY
CARTER, *Med. Rec.*, Feb. 11, 1911, p. 247.**

THE author urges the treatment of the inebriate as an insane person in a specially adapted institution. He should not be regarded as a criminal, but be placed under medical treatment. Arrangements for suitable work should be provided for him. For the accomplishment of these ends the problem must be taken in hand by the legislature, and the public must be brought to a right sense of the vital interests at stake.

A. HILL BUCHAN.

**RECKLINGHAUSEN'S DISEASE. PLEXIFORM NEUROMA OF
(365) THIGH. REMOVAL. (Maladie de Recklinghausen. Névrome
plexiform de la cuisse. Ablation.) KAEPELIN, *La Loire
médicale*, 1910, xxix., p. 308.**

A MARRIED man, aged 50, with no family history, in addition to generalised molluscos tumours, which had appeared at twenty, presented an ovoid tumour of the left thigh extending from the buttock to the popliteal space. It had recently grown very rapidly, and was spontaneously painful and very tender on palpation. Walking was very difficult. There was obvious mental debility. At the operation the tumour was found to be attached to the sciatic nerve, from which it was separated. On examination

it proved to be a plexiform neuroma the centre of which appeared to be undergoing a malignant degeneration. No microscopical examination, however, was made. On his discharge, three weeks after the operation, the spontaneous pain had almost gone, but walking was still difficult.

In the subsequent discussion Viaunay recorded a case of von Recklinghausen's disease associated with a plexiform neuroma of the anterior crural. At the operation the nerve had to be divided before the tumour could be removed. The consequences of the division, however, were not serious.

J. D. ROLLESTON.

RECKLINGHAUSEN'S DISEASE. (*Un cas de maladie de Recklinghausen.*) BOULENGER, *Journ. de Neurol.*, 1911, xvi., p. 103.

A WOMAN, aged 39, with a family history of tuberculosis, had a mammary tumour removed in June 1908. In the winter of 1909 she complained of numbness in her legs. Boulenger found the knee jerks exaggerated and a general state of nervousness and causeless melancholy. In September 1910 she became deaf in the right ear and blind in the left eye, in the anterior chamber of which a growth of probably malignant nature was seen. She also complained of giddiness. Wasserman's reaction was negative, and anti-syphilitic treatment had no effect. In October numerous little subcutaneous tumours appeared, first in the epigastrium and then on the chest and back of the thighs. There was no pigmentation. Right facial palsy developed. Vomiting also was noted, but this may have been due to alcoholism. There was no mental deficiency. No biopsy of the tumours was made, and the issue of the case is not recorded.

J. D. ROLLESTON.

NEUROFIBROMATOSIS WITH SARCOMATOUS DEGENERATION. (367) (*Ueber Neurofibromatose mit sarkomatöser Entartung.*) A. MOST, *Berl. klin. Wchschr.*, 1910, xlvii., p. 1641.

THE patient was an unmarried woman, aged 40, with a negative family history. Generalised skin tumours first appeared at the age of twelve years, but caused her no inconvenience. When twenty-five years old she noticed a tumour on the back of the left thigh, but it was not till fourteen years later that it became painful and caused insomnia. At the operation for its removal it was found to be enclosed in a fibrous capsule between the biceps and semitendinosus, and to be covered with the enormously thickened sciatic nerve. The anterior tibial nerve was found covered with

hundreds of small nodules, which proved to be pure fibromata. The larger tumour was found to be a myxo-sarcoma. After the operation paresis developed in the region of the anterior tibial and peroneal nerves, characterised chiefly by anæsthesia of the toes and also by slight motor weakness. The pain gradually ceased, and the palsy improved but did not quite disappear. There was no recurrence one year after the operation. J. D. ROLLESTON.

MULTIPLE SKIN FIBROMATA WITH SUPRARENAL TUMOUR.

(368) (Ueber einen Fall von multipler Hautfibromen mit Nebennierengeschwulst.) K. KAWASHIMA, *Virchow's Archiv*, 1911, ciii., p. 66.

THE patient was a woman, aged 33, who died of puerperal fever. No other clinical history was available. The skin fibromata were found to have originated from the connective tissue sheaths of the nerves. The nerve fibres were not involved. The suprarenal tumour was characterised by primary hyperplasia and polymorphism of the medullary cells. The incomplete capsulation and hæmorrhages indicated its malignant nature. Kawashima regards the suprarenal tumour not as a mere accidental complication but as an important feature of the condition. Chauffard is the only other writer who has recorded a case of von Recklinghausen's disease associated with a suprarenal tumour.

J. D. ROLLESTON.

THE DEVELOPMENT OF THE CORTEX IN THE HUMAN SUPRARENAL GLAND, AND ITS CONDITION IN HEMICEPHALY. T. R. ELLIOT and R. G. ARMOUR.

THE human suprarenal gland at birth has long been noticed to be surprisingly large in relation to the bulk of the kidney. This is here shown to be the result of a peculiar hypertrophy of the cortex which commences very early in foetal life and continues until birth. Immediately after birth this mass of hypertrophied cells undergoes fatty change, and has disappeared by the end of the first year. These cells are richly supplied with blood vessels, but do not store up the doubly refracting fatty substance so characteristic of the secretion of the adult cortex. Enveloping the mass is a rim of smaller cells which alone develop and form the adult cortex.

In a case of "hemicephaly," a child born without cerebral hemispheres, the characteristic small size of the suprarenals was due to the absence of the "foetal" cortex, the adult cortex and chromaffine cells being normal. A. NINIAN BRUCE.

**ACTINOMYCOTIC MENINGITIS DUE TO SPHENOIDAL SINUS
(370) SUPPURATION, CAUSING DEATH FOUR DAYS AFTER
EXCISION OF RIGHT EYE.** E. STEVENSON and C. A. ADAIR-
DIGHTON, *The Ophthalmoscope*, 1911, ix., p. 403.

A BLACKSMITH, aged 62, had his right eye excised for panophthalmitis following corneal ulceration of traumatic origin from which a pure culture of pneumococci was obtained. The following day symptoms of acute purulent meningitis developed and death took place four days after the operation. In addition to extensive purulent meningitis the necropsy showed an old chronic suppurative lesion of the right sphenoidal sinus, the posterior wall of which was completely destroyed. Surface sections of the brain showed typical actinomycotic filaments. The writers explain the case by saying that as long as the patient could get about the abscess drained satisfactorily, but when he was confined to bed the pus filled the sinus, and eroding the posterior wall infected the meninges by direct continuity. Reference is made to Henry's paper (v. *Review*, 1910, viii., p. 112). J. D. ROLLESTON.

**PARAMENINGOCOCCIC CEREBRO-SPINAL MENINGITIS. (Mén-
(371) ingites cérébro-spinales à paraméningocoques.)** DOPTER, *Bull.
et mém. de la Soc. méd. des Hôp.*, 1911, xxxi., p. 590.

THE parameningococcus was first described in 1909 at the Soc. de Biol. by Dopter, who had isolated it from the pharynx of healthy subjects. It resembles the meningococcus in morphological and cultural characteristics, but differs from it in not being agglutinated by anti-meningococcic serum. Dopter has collected seven sporadic cases of cerebro-spinal meningitis due to this cause, all of which proved fatal. The symptoms were those of epidemic cerebro-spinal meningitis (v. *Review*, 1911, ix., p. 205). J. D. ROLLESTON.

**A CASE OF MENINGOCOCCUS SEPTICÆMIA WITH DEMON-
(372) STRATION OF THE MENINGOCOCCUS IN THE BLOOD
SMEAR.** A. WADSWORTH SHILTON, *Journ. Amer. Med. Assoc.*,
1911, i., p. 1446.

A PREVIOUSLY healthy boy, aged 12 years, complained of pain over both mastoids. Three days later left ptosis and rigidity of the neck and extremities developed. 25 c.c. of turbid cerebro-spinal fluid containing meningococci were withdrawn. Blood examination: Total leucocytes, 7500; polymorphonuclears, 85 per cent.;

large mononuclears, 11 per cent.; small mononuclears, 4 per cent. Fully 1 per cent. of the leucocytes, both monopolymorphonuclears, contained meningococci; most of the leucocytes contained only a single pair, but a few contained two pairs.

Shilton concludes that the occurrence of meningococcal septicæmia is commoner than is generally supposed.

J. D. ROLLESTON.

REPORT OF A CASE OF PURULENT CEREBRO-SPINAL MENINGITIS (373) DIAGNOSED DURING LIFETIME OF PATIENT AS DUE TO INFLUENZA BACILLUS. J. R. CLEMENS and C. W. GOULD, *Arch. of Pediatrics*, 1911, xxxviii. 210.

A SHORT record of a fatal case of cerebro-spinal meningitis. The purulent fluid obtained by lumbar puncture yielded a pure culture of influenza bacillus.

W. T. RITCHIE.

SEROUS MENINGITIS. LEOPOLD, *Univ. of Penns. Med. Bull.*, (374) Vol. v.

SEROUS meningitis is defined as an acute or chronic disease "due to inflammation of the pia arachnoid, with a varying amount of fluid exudate and slight infiltration of round cells and oedematous exudate." It is usually secondary to some other inflammation in the body, as otitis media, metritis, or some acute general disease.

It has been shown to be the same disease as the "meningism" of Dupré and the "acute hydrocephalus" of Hugenin.

In many cases it seems to be merely the first stage of a septic meningitis. The symptoms are those of other forms of meningitis.

A good review of the literature is given.

J. GODWIN GREENFIELD.

IDIOPATHIC CIRCUMSCRIBED SPINAL SEROUS MENINGITIS. (375) T. H. WEISENBURG and GEORGE P. MULLER, *Am. Journ. Med. Sci.*, Nov. 1910.

A NUMBER of cases of circumscribed spinal serous meningitis have been recorded. In some instances the process appears to have been secondary. Again, instances are reported in the literature such as the present, in which the symptoms have promptly disappeared after operation and in which no evidence of any primary disease was forthcoming. The authors describe their case in detail, and point out that in every case submitted to operation a

diagnosis of tumour has been made. They believe, however, that a differential diagnosis is possible, the important point being the variability of the sensory and motor symptoms in consecutive examinations. The data upon which they lay emphasis are: 1. Sensory: (a) pains of a numb, burning character in part or all of a limb, which vary from day to day in their distribution; and (b) disturbance of sensation, which may or may not be absolute, the limits of which vary. 2. Motor: (a) weakness, generally appearing in one limb and later in both, which may be spastic or flaccid on different examinations; and (b) variability in reflexes which may be increased or diminished in consecutive examinations.

EDWIN BRAMWELL.

THE BLOOD PRESSURE IN EPIDEMIC CEREBRO-SPINAL (376) MENINGITIS. G. CANBY ROBINSON, *Archiv of Intern. Med.*, Vol. v., p. 482.

CUSHING and others have demonstrated an intimate relationship between intracranial and blood pressures. The present series of observations were carried out with the purpose of ascertaining whether a heightened intracranial tension is sufficient to cause a rise of blood pressure, and whether withdrawal of cerebro-spinal fluid in a case of high blood pressure will cause a fall of blood pressure by lowering the intracranial pressure. The observations were made on twenty-six cases of epidemic cerebro-spinal meningitis. The details are fully recorded and possible deductive fallacies judiciously discussed. The conclusions arrived at are as follows:—

“Heightened intracranial tension appears to be an almost constant phenomenon in epidemic cerebro-spinal meningitis.”

“Heightened blood-pressure of a moderate degree is not infrequently seen in the early acute stage of the disease when exacerbations of symptoms occur, late in the disease, or when the malady takes on a chronic aspect.”

“The blood pressure seems to bear some relation to the severity of the disease, being higher when the symptoms are severe, and low during convalescence.”

“The withdrawal of cerebro-spinal fluid by lumbar puncture has no constant effect on the blood-pressure, although there is usually a fall of blood-pressure synchronous with this procedure.”

“This series of observations affords no definite evidence that heightened intracranial tension causes an increased blood-pressure in meningitis, unless it is late in the disease, when internal hydrocephalus may develop as a result of blocking of the foramina of the fourth ventricle.”

EDWIN BRAMWELL.

SYPHILIS OF THE NERVOUS SYSTEM. ERNEST JONES, *Inter-*
(377) *state Med. Journ.*, Jan. 1911, p. 39.

A GENERAL review of this subject. The paper forms part of a symposium on syphilis, which has also been published in book form.

AUTHOR'S ABSTRACT.

SYPHILIS AND THE NERVOUS SYSTEM, WITH REMARKS ON
(378) **THE WASSERMANN TEST AND SALVARSAN.** W. M.
LESZYNSKY, *Med. Rec.*, Feb. 18, 1911.

Too much reliance is now being placed on modern sero-diagnostic methods in place of careful clinical observation.

The Wassermann reaction is by no means an infallible test, and should be received only as confirmatory evidence; a negative Wassermann reaction no more excludes syphilis than the absence of tubercle bacilli in the sputum excludes pulmonary tuberculosis. Oppenheim is quoted as stating that, as a result of his clinical observation of a large number of cases, salvarsan is no better than mercury and iodides in the treatment of cerebral, spinal, and cerebro-spinal syphilis.

D. K. HENDERSON.

SALVARSAN IN SYPHILIS. S. POLITZER, *N.Y. Med. Journ.*,
(379) Feb. 4, 1911.

THE author has employed the remedy in numerous cases of primary, secondary, and tertiary syphilis, and has obtained excellent results. He considers it the most effective symptomatic remedy for the lesions of syphilis that we possess. Some cases which have failed to respond to salvarsan have responded to mercury, and several cases are quoted in which recurrences occurred. In the majority of cases the Wassermann reaction remained positive; in some it became negative in a few weeks and then again became positive; in others a weak Wassermann reaction before injection has become strongly positive after the injection.

D. K. HENDERSON.

ABSTRACT OF A PAPER ON THE SYPHILITIC FACTOR IN
(380) **THE HEMIPLEGIAS AND DIPLEGIAS OF INFANCY**
AND CHILDHOOD. CHARLES R. BOX, *Brit. Med. Journ.*,
April 29, 1911.

THE writer points out that a comparison of the accounts cited from various authors warrants the conclusion that the lesions present in

the brains of syphilitic paralysed children bear a close resemblance to those found in adults. Multiplicity and combination of lesions are the striking characteristics—pachymeningitis, leptomeningitis, endarteritis and even gummata being associated in various degrees. Cerebral sclerosis may also result.

Adopting the ordinary but not altogether satisfactory classification of the paralyses into those of ante-natal, natal and post-natal origin, the natal group may be excluded from consideration on the ground that they are traumatic, being due to hæmorrhage. This leaves the ante-natal and post-natal cases for consideration.

Diplegias of ante-natal origin are sometimes, but not invariably, syphilitic. Delbet is quoted as having obtained a positive Wassermann reaction in thirteen such cases. The author records two cases which came under his own observation. One was a premature diplegic child whose mother had a large gummatous perforation of the palate; the other was diplegic and microcephalic, with evidence of past iritis, probably syphilitic. In four other ante-natal cases the Wassermann reaction was negative, but in two of these the test was applied to the cerebro-spinal fluid only.

Hemiplegias and diplegias of post-natal origin own various causes. The syphilitic variety undoubtedly occurs, but has been held to be rare. The percentage of cases suspected of syphilis varies much in the statistics of various observers: from less than 1 per cent. according to some to more than 20 per cent. according to others. Hadden even suspected as great a frequency as 40 per cent. The writer found one case in five (and his later experience tends to confirm this proportion).

In considering the causal diagnosis all facts have to be taken into consideration. Previous history, family history, and mode of onset are each important. The presence of stigmata of syphilis in both parents and patient should be sought. Eye changes in the children are particularly valuable, especially choroiditis, iritis, or keratitis (also fixity of pupils). Too much stress must not be laid upon the occurrence of miscarriages, especially in ante-natal diplegic cases. More exact information is to be expected from the application of the Wassermann test to the blood, and also the examination of the cerebro-spinal fluid for the possible presence of the same reaction, for globulin, and for lymphocytosis.

Very suspicious modes of onset of the paralysis are:—1. The development of hemiplegia, which is preceded for some long period by premonitory and recurrent convulsions. 2. The installation of the disease by separate attacks of paralysis which succeed each other at intervals of days or even weeks. 3. The silent development of acute hemiplegia.

AUTHOR'S ABSTRACT.

GIGANTISM, INFANTILISM, AND ACROMEGALY. MAGALHAES
(381) LEMOS, *Nouv. Icon. de la Salpêtrière*, Jan.-Feb. 1911, p. 1.

A DETAILED clinical description of a very interesting case of infantile gigantism coupled with acromegaly. In this case there is some evidence to suggest that the hypophyseal defect is congenital.
S. A. K. WILSON.

RETROGRADE INFANTILISM WITH PLURIGLANDULAR SYN-
(382) DROME. (Un cas d'infantilisme de type reversif avec syndrome pluriglandulaire.) V. CORDIER and G. FRANCILLON, *Lyon méd.*, 1911, cxvi., p. 26.

A RECORD of a case in a man, aged 33, who was physically and mentally well-developed until an attack of typhoid fever, the date of which is not given; six months after his illness his hair began to fall out, his beard stopped growing, and there was a decline in his sexual appetite rapidly ending in absolute frigidity. There was also a complete change in his mental condition, and he became apathetic, quarrelsome, timid, and slow in his replies. On examination the thyroid was found to be absent and the testes atrophied. The blood-pressure was low, and there was well-marked pigmentation of the face. The X-rays showed no abnormality of the sella turcica. Signs of tuberculosis of the left lung were present. Treatment by thyroid and spinal cord extract produced no effect.
J. D. ROLLESTON.

CONTRIBUTION TO THE STUDY OF OSTEOMALACIA, ETC. (Con-
(383) tribution à l'étude de l'osteomalacie dans ses rapports avec les altérations des glandes endocrines.) MARINESCO, PARHON, and MINEA, *Nouv. Icon. de la Salpêtrière*, Jan.-Feb. 1911, p. 33.

THIS is a long and critical exposé of the subject of osteomalacia, based on the clinical and pathological examination of three cases. A very complete historical survey is given, and there is a bibliography of 163 references. The authors remark on the changes in the thyroid in each of their cases and consider the thyroid defect is of primary importance in the development of the disease. In the first case the thyroid was excised for goitre, and osteomalacia eventually supervened. In the second case the thyroid weighed only 8 grammes and was sclerosed and showed other alterations. In the third case the gland was markedly sclerosed and the follicles showed atrophic changes.
S. A. K. WILSON.

THE PATHOLOGICAL ANATOMY OF A CASE OF DERCUM'S
 (384) **DISEASE OCCURRING IN AN EPILEPTIC IMBECILE.**
 (Étude anatomo-pathologique d'un cas de maladie de Dercum
 chez une imbécile épileptique.) MARCHAND and NONET, *Nouv.*
Icon. de la Salpêtrière, March-April 1911, p. 144.

APART from the cortical condition associated with the imbecility and epilepsy, the only lesion found, post-mortem, was an adenomatous sclerosis of the thyroid gland; part of it was adenomatous, other parts were sclerosed and some areas showed cystic degeneration.
 S. A. K. WILSON.

RHIZOMELIC SPONDYLOSIS, ETC. (La spondylose rhizomélique
 (385) **est une entité morbide spéciale.**) ELDAROFF, *Nouv. Icon. de la*
Salpêtrière, March-April 1911, p. 121.

RHIZOMELIC spondylosis occurs with a preponderating percentage in the male sex, and in comparatively young men. While the patient's general condition is good, the disease is characterised by two fundamental symptoms, viz., pains and rigidity of the vertebral column, shoulders, and hips. Its onset may be acute, sub-acute, or chronic. The pains are located in the vertebral column, or part of it, in the lumbo-sacral region with radiation into the hips, rarely in the neck. They are lancinating but not spontaneous; they occur with and are aggravated by movement. They diminish or cease after some weeks or months, and leave the affected part ankylosed. In chronic cases the pains are less violent and very rarely are practically absent. Ankylosis is the primal process of which the pains are a symptom. The mode of propagation of the process of ossification is variable. There is a kyphotic curve of the vertebral column of large radius and more or less regular; the physiological lumbar lordosis is usually flattened out. The thoracic cage is fixed and respiration is abdominal. A horizontal fold across the abdomen is common. All other articulations than the hip and shoulder remain practically intact. A characteristic symptom is the absence of all bony deformities with the exception of the kyphosis. The spinal column is not tender on pressure.
 S. A. K. WILSON.

ENDEMIC TETANY IN THE GILGIT VALLEY. R. M'CARRISON,
 (386) *Lancet*, June 10, 1911, p. 1575.

THE writer points out that in India the distribution of tetany is peculiarly local, and appears to correspond more or less with the distribution of goitre. Sufferers may rid themselves from it by leaving the locality. In India it is a disease of women, affecting

them specially during the child-bearing period. The author has only met with one case in the male. The children of women who suffer from tetany are frequently cretinous. Tetany is usually limited to the spring months, February to May, and ceases abruptly during the summer months, to recur next spring. In all the above cases of tetany it was associated with goitre (except in the single male case). The goitre was in all cases degenerated and the seat of adenomatous or cystic changes.

The author obtained satisfactory results in eight cases by calomel and rhubarb followed by thymol in 5-grain doses night and morning for several weeks. In these eight cases the attacks completely disappeared under the treatment.

The author does not consider that tetany is due to parathyroid deficiency, and regards the thyroid and parathyroid glands as one unit. He is inclined to the view that as tetany in India is so closely associated with goitre, alterations in the efficiency of the thyroid gland are factors of great importance in its production, and that the absorption of toxic substances from the alimentary canal in subjects suffering from thyroid instability may exercise an important influence in the causation of the symptoms. He suggests that further research along this line might prove of value.

A. NINIAN BRUCE.

REMARKS ON THE TESTING OF THE PUPILLARY LIGHT

(387) **REACTION.** (*Bemerkung zur Prüfung der Pupillarlichtreaktion.*) H. OPPENHEIM, *Neurol. Centralbl.*, No. 7, 1911, S. 362.

In neuropathic subjects the author failed to obtain the pupillary light reflex on testing in the dark with a pocket electric lamp, although it was evident in daylight. He suggests as an explanation that the sudden illumination produces a psychical condition of fright which tends to dilate the pupil, thus neutralising the contraction. At the same time he admits the possibility of the difference in the light being the cause of the phenomenon.

H. M. TRAQUAIR.

ON THE "REMARKS ON THE TESTING OF THE PUPILLARY (388) LIGHT REACTION" OF PROFESSOR OPPENHEIM.

SCHUSTER, *Neurol. Centralbl.*, No. 9, 1911, S. 472.

THE author has noticed in dark-room pupil testing by a gaslight, that in many cases the reaction, while not absent, is much less brisk than that produced by daylight. The phenomenon is not confined to neuropathic subjects, and he attributes it to the difference in the light. In some cases it is reversed.

In the experience of the writer of the abstract pupil testing by artificial light is frequently unreliable. H. M. TRAQUAIR.

**PRELIMINARY REPORT OF A STUDY OF HEREDITY IN THE
(389) LIGHT OF THE MENDELIAN LAWS.** CANNON and
ROSANOFF, *Journ. of Nerv. and Ment. Dis.*, May 1911, p. 272.

THE authors have studied the pedigrees of eleven patients, including thirty-five matings. They enunciate a number of conclusions concerning an inheritance of psychopathic conditions. In their material, however, they include such disparate conditions as "feeble-mindedness, convulsions in childhood from trivial causes or chronic epilepsy, grave hysteria, various eccentricities, dementia præcox, manic-depressive insanity, paranoic conditions, involutional psychoses, and the like." In other words, they have not even attempted to avoid the fundamental fallacy underlying all such studies, namely, of regarding a "neuropathic taint" as a unity. If there is one point more clearly brought out by Mendelian researches than another, it is the absolute necessity for first isolating biological units, and differentiating them from composite characters, before dealing with the problems of inheritance.

ERNEST JONES.

PSYCHIATRY.

**ON THE WASSERMANN REACTION IN 172 CASES OF MENTAL
(390) DISORDER (CARDIFF CITY MENTAL HOSPITAL), AND
66 CONTROL CASES, SYPHILITIC AND OTHER (CHIEFLY
FROM THE CARDIFF INFIRMARY), WITH HISTORICAL
SURVEY FOR THE YEARS 1906-10 INCLUSIVE: COM-
MENTS AND CONCLUSIONS.** H. A. SCHOLBERG and EDWIN
GOODALL, *Journ. Ment. Sc.*, April 1911.

THIS comprehensive paper deals with the Wassermann reaction in mental diseases. The authors pointed out that their results had not yielded such a high percentage of positive results as those published elsewhere. After a brief description of the Wassermann reaction there follows a concise summary abstracted from the literature of the past four years, concerning this reaction in general paralysis and other mental disorders. The elaborate tables and notes, the comments upon statements in the historical survey based upon their own experience, and then the discussion as to the variability of the reaction are most instructive. In their conclusions the authors stated that there was still considerable discrepancy as to the frequency of occurrence of a positive Wassermann reaction in the serum and cerebro-spinal fluid of general paralysis, as well as to the relative frequency of occurrence of the reaction in these fluids in general paralysis. In cases of insanity, other than general paralysis, and not syphilitic, a positive

reaction rarely occurred, but a positive Wassermann reaction was more frequently obtained in cases of syphilis than in those of general paralysis. In the serum and cerebro-spinal fluid of general paralytics—clinically typical—a negative reaction was sometimes obtained, and the authors stated that the presence or absence of that disease should not be diagnosed upon a single result; also that a repeated positive reaction in the cerebro-spinal fluid in a doubtful mental case with symptoms referable to the nervous system was proof of general paralysis. From their experience the Nonne-Apelt test was found almost as reliable as the Wassermann reaction.

GEORGE R. JEFFREY.

**A NOTE ON THE DETERMINATION OF THE OPSONIC INDICES
(391) OF THE BLOOD IN INSANE PERSONS.** ALICE BABINGTON,
Journ. Ment. Sc., April 1911.

IN this paper a comparison is made between the opsonic indices obtained from the blood of the insane and from that of normal individuals. Fifty-two mental cases were examined, and in each the opsonic indices were ascertained for the bacillus coli, streptococcus faecalis, staphylococcus aureus and bacillus paratyphoid. From the figures which are given, it is seen that there is a lowering of the opsonic indices for all insanities to these organisms. Amongst other things, the author concludes that the average index of insane patients is definitely below the normal average; that in acute insanities it is markedly below the normal average; that in chronic delusional insanities it is slightly below the normal average, whilst in recovered cases the index may even be above the normal average.

GEORGE R. JEFFREY.

**NOTES ON GYNÆCOLOGICAL CONDITIONS COINCIDENT WITH
(392) MENTAL DISTURBANCES.** E. TENISON COLLINS, *Journ.
Ment. Sc.*, April 1911.

THE author in this paper draws attention to the intimate relationship between the central nervous and generative systems in the female, and, after quoting the opinion of Gorton, Kraemer, Robe, M'Naughton-Jones, and others, relates in detail several gynæcological cases accompanied by nervous diseases which had come under his own observation and treatment. He showed that the treatment of pelvic lesions is followed by improved physical and mental health, and strongly advocated that symptoms of pelvic disease in the insane should be treated apart from the insanity.

GEORGE R. JEFFREY.

PREDEMENTIA PRÆCOX. JELLIFFE, *Journ. of Nerv. and Ment.* (393) *Dis.*, Jan. 1911, p. 1.

JELLIFFE gives here a study of the important subject of the predisposition to dementia præcox, and tries to define the hereditary and constitutional features. The paper deserves to be read in the original.

ERNEST JONES.

THE GROSS AND HISTOLOGIC FINDINGS IN DEMENTIA (394) PARETICA. YAWGER, *Amer. Journ. of Insanity*, April 1911, p. 725.

A GENERAL review of the literature of this subject.

ERNEST JONES.

IMMUNITY IN RELATION TO PSYCHIATRY. J. G. FITZGERALD, (395) *Amer. Journ. of Insanity*, April 1911, p. 687.

A GENERAL review of sero-diagnostic tests in psychiatry.

ERNEST JONES.

CLINICAL STUDIES OF THE PSYCHIC FACTORS CONCERNED (396) IN FUNCTIONAL PSYCHOSES. C. F. READ, *Amer. Journ. of Insanity*, April 1911, p. 705.

THIS paper presents an excellent study of two cases along the lines laid down by Freud and Jung. The symbolic nature of the symptoms, and the sexual origin of them, is amply demonstrated. The cases appear to be ones of dementia præcox, though no diagnosis is mentioned in the paper.

ERNEST JONES.

CYCLOTHEMIA. S. E. JELLIFFE, *Amer. Journ. of Insanity*, April (397) 1911, p. 661.

AFTER giving an interesting historical review, Jelliffe briefly describes some of the features of cyclothemia, more often written cyclothymia, a term that is applied to both the mild forms of manic-depressive insanity and to the constitutional features that underlie this psychosis. He lays stress on the fact that the condition is extremely frequent, and that it is commonly misinterpreted. It masquerades as "functional dyspepsia," as neurasthenia, psychasthenia, and so on.

ERNEST JONES.

TREATMENT.

THE THERAPEUTIC EFFECT OF SUGGESTION. ERNEST JONES,
(398) *Journ. f. Psychol. u. Neurol.*, Jan. 1911, Bd. xvii., *Ergänzungshft.*,
S. 427.

It is maintained that suggestion acts by engaging the affections of the patient, which previously had been concerned with the production of psycho-neurotic symptoms. The process is an unconscious one. In leading to psycho-sexual dependence on the physician, it defeats the aim of a satisfactory psychotherapy, which should be to bring about self-reliance. This is ensured in psycho-analysis, which gives the patient an increased control over his aberrant mental processes.

AUTHOR'S ABSTRACT.

PSYCHO-ANALYSIS AS A NEW THERAPEUTIC PROCEDURE
(399) **IN PSYCHO-NEUROSIS.** ALFRED GORDON, *N.Y. Med. Journ.*,
April 8, 1911.

A YOUNG lady of good intelligence and education had for four years suffered from various symptoms of psychasthenia, *e.g.* phobias, impulses, obsessions. During these years she was treated with rest in bed, special diet, massage, hydrotherapeutics and suggestive methods, but no improvement took place in her condition. Finally, for a period of four months psycho-analysis was employed in the form of "free association." She recalled that ten years previously, when she was only nine years old, her married sister had a violent discussion with her husband, after which they separated. The reason for the discussion she then learned was due to his irregular sexual habits; he had on one occasion sexually assaulted the patient.

After this event had been brought to the surface and discussed the patient's condition rapidly improved, and finally a complete recovery followed.

The treatment of the psycho-neurosis by the psycho-analytic method is held to be one of the greatest achievements of scientific medicine.

D. K. HENDERSON.

IS STERILISATION OF THE HABITUAL CRIMINAL JUSTIFIABLE? C. E. NAMMACK, *Med. Rec.*, Feb. 11, 1911.

IN this article a sharp protest is entered against compulsory sterilisation. The author states that those who are in favour of it for criminals base their opinion entirely upon the subject of heredity. He holds that heredity only determines the species' characteristics such as defects in physical development, but that mental and moral defects are acquired traits, and are entirely beyond the explanation of embryology. As a specific for crime any punishment is thought to be a failure, and therefore com-

pulsory sterilisation would be unlikely to have beneficial effect, as it would simply return the criminal to society with all his anti-social instincts aroused. If the operation for sterilisation is to meet with any approval it should be voluntary on the part of the person undergoing it.

A hopeful view is taken of sociological work and of modern educational methods in the treatment of criminals.

D. K. HENDERSON.

BOOKS AND PAMPHLETS RECEIVED.

Sheldon. "The Sense of Smell in Selachians" (*Journ. Experiment. Zool.*, Jan. 1911).

D'Ormea. "Ressegna di Studi Psichiatrici," Vol. i., f. 2, 1911.

J. Ryland Whitaker. "Anatomy of the Brain and Spinal Cord." Fourth Edition. Edinburgh: E. & S. Livingstone, 1911. 5s. 6d.

William A. White. "Mental Mechanisms." (Nervous and Mental Disease, Monograph Series, No. 8.) New York, 1911.

W. A. Jolly and W. T. Ritchie. "Auricular Flutter and Fibrillation" (*Heart*, Vol. ii., No. 3, May 1911).

C. Macfie Campbell. "The Form and Content of the Psychosis: the Rôle of Psycho-analysis in Psychiatry" (*State Hosp. Bull.*, May 1910).

Bárány and Wittmaack. "Funktionelle Prüfung des Vestibular-Apparates." Jena: Gustav Fischer, 1911.

Stanford. "The Production of Indigo in the Human Organism" (*Journ. Ment. Sc.*, April 1911).

Schölberg and Goodall. "On the Wassermann Reaction in 172 Cases of Mental Disorder, etc." (*Journ. Ment. Sc.*, April 1911).

Mackenzie Wallis. "Metabolism in the Insane" (*Journ. Ment. Sc.*, April 1911).

"Report of the Poliomyelitis Committee of the Medical Association of the District of Columbia; Epidemic 1910" (*Washington Med. Ann.*, May 1911).

Sir Victor Horsley. "An Address on the Surgical *versus* the Expectant Treatment of Intracranial Tumour."

Sir Victor Horsley. "The Operative Treatment of Optic Neuritis." London, 1908.

Kramer and Horsley. "The Effects produced on the Circulation and Respiration by Gun-shot Injuries of the Cerebral Hemispheres" (*Phil. Trans. Roy. Soc. of London*, Vol. 188).

Salisbury MacNalty and Sir Victor Horsley. "On the Cervical Spino-bulbar and Spino-cerebellar Tracts and on the Question of Topographical Representation in the Cerebellum" (*Brain*, 1909).

Otto May and Sir Victor Horsley. "The Mesencephalic Root of the Fifth Nerve" (*Brain*, 1910).

Schreiber. "La Poliomyélite épidémique (Maladie de Heine-Medin)." Paris: Steinheil, 1911. 10 frs.

Henri Claude et Stephen Chauvet. "Sémiologie réelle des Sections totales des nerfs mixtes périphériques." Paris: Maloine, 1911.

Arch. Brasil. de Psychiat., Anno vi., Nos. 3 e 4, 1910.

Review of Neurology and Psychiatry

Original Articles

THE PATHOLOGY OF TWO CASES OF TABETIC AMYOTROPHY.¹

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(Plates 17-28.)

MUSCULAR atrophy in tabes dorsalis is a feature of that disease which is familiar enough to the neurologist. It has been calculated, indeed, that the condition is present in 20 per cent. of cases, although this figure is perhaps a little higher than experience of in- and out-patients at the National Hospital suggests. In any case, tabetic muscular atrophy has been studied by many observers from both the clinical and the pathological standpoints, and the varying nature of the pathological picture has had its counterpart in the multiplicity of pathogenic explanations advanced. It is not intended to dwell on the clinical features of this muscular atrophy in the present paper, further than to note that three main types may be distinguished.

1. Many cases of tabes show a degree of general muscular wasting or emaciation, more particularly in the lower extremities, that is somewhat outside the scope of this communication, and will not further be referred to.

¹ A brief communication on the subject of this paper was presented to the Royal Society of Medicine of London, and will be found in its *Transactions*, Neurological Section, Vol. ii., No. 1, November 1908.

2. Other cases show group wasting of a frankly radicular or peripheral type. This phenomenon is common enough, relatively speaking, and easily recognisable. Thus, for instance, the muscles in the distribution of the spinal accessory nerve may atrophy, or of one of the main nerves of the arm or leg. I have seen a characteristic wrist-drop occur in the course of the disease, with secondary muscular wasting. Laryngeal and other palsies of the same type as a rule belong to this class.

3. There is, however, a type in which the atrophy begins in the small muscles of the hands, and proceeds bilaterally and more or less symmetrically after the fashion of a progressive muscular atrophy. Cases of this sort have been noted by various observers since the days of Charcot, Pierrot, and Leyden.

It is the minute pathology of two cases under this latter rubric which forms the subject of the present paper. The first of these concerns a patient who was in the National Hospital on two occasions, under the care of Sir David Ferrier, to whom I wish here to express my grateful thanks for his permission to make use of the case. The material in the second case I owe to the kindness of Dr Gordon Holmes. As the pathology of this type of tabetic amyotrophy has appeared to be somewhat variable, a detailed record of the findings in two cases may be instructive.

CASE I.—A. M., aged 47, was admitted to the National Hospital, under the care of Sir David Ferrier, on January 18, 1905.

He had had syphilis twenty-two years previously, *i.e.* at the age of twenty-five. For fourteen years he had suffered from difficulty in micturition; for ten years he had been subject to lightning pains, and for nine years girdle pains. About ten years ago he noticed gradual and general slight emaciation. He first remarked the local wasting of the small hand muscles about seven years ago, a change which began in the right hand and subsequently spread to the left. For years his principal symptom had been an abnormal sense of fatigue in the legs, but up to two years before his admission to the hospital he could walk fairly well. Influenza intensified his troubles, and when he came into hospital he was very weak indeed.

Presenting the characteristic symptoms and signs of tabes



FIG. 1.



FIG. 2.

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FIG. 3.



FIG. 4.

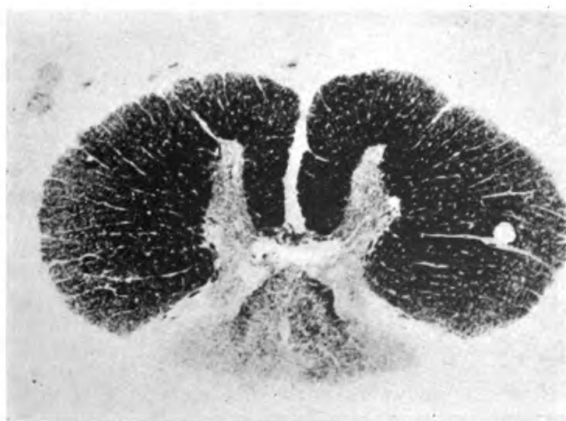


FIG. 5.

To illustrate Paper by Dr Wilson.

dorsalis in the shape of double Argyll-Robertson pupil, absent deep reflexes, sphincter impairment, loss of deep sensibility, incipient Charcot joint, shooting pains, paræsthesias of all sorts, girdle pains, and gastric crises, he showed in addition a pronounced degree of muscular wasting of the Aran-Duchenne type. Thus there was extreme atrophy of the thenar and hypothenar eminences on both sides, the muscles of which had lost both their galvanic and their faradic reaction. The interossei, however, were less wasted, and contracted on electrical stimulation. The corresponding movements were, of course, exceedingly weak. The thumb movements were absent, or performed inadequately by the help of the long muscles. Both hands assumed the position, to some extent, of *main-en-griffe*. Their appearance at this stage is represented in the photograph (Fig. 1). In addition, flexion and extension at the wrist were weak, and extension of the fingers: the volume of the forearm muscles, however, was still very fair. In the legs all the muscles were rather small, and in addition there was marked wasting of the anterior tibial group on either side, with corresponding impairment of motility: the toe movements were good. The absence of subcutaneous fat rendered the wasting of the muscles more obvious.

Sensibility to painful stimuli was diminished along the ulnar border of both arms and hands, and almost lost in the legs. There was a certain amount of tactile and pain loss over the trunk. The sense of vibration was completely lost in the legs, and muscle pain sense was absent. After four months' treatment the patient was discharged little, if at all, improved.

He was re-admitted on April 6, 1906, considerably worse. The muscular wasting had advanced steadily, until the hands presented the appearance shown in Fig. 2. The atrophy of the thenar and hypothenar groups was the most extreme I have ever observed. It was possible to follow the tendon of the long flexor of the thumb in its course down the whole of that digit, a point that is brought out in the photograph. The interossei had wasted considerably, and the double *main-en-griffe* aspect was unmistakeable. Fig. 3 represents the appearance of the hand from the side, to show the concavity where the thenar convexity should be. All the forearm muscles, in particular the extensors, were weaker, and commencing to waste. In the legs the condition had not progressed much, beyond an increase in the

general thinness of the musculature. In spite of the wasting of the anterior tibial group dorsiflexion of the foot was possible through a fair range, though the movement was very weak.

The patient became progressively weaker, and died about six months later, on October 7, 1906.

At the autopsy, twenty-four hours after death (performed with the assistance of Dr Holmes), it was remarked that the pia arachnoid was thickened and opaque, especially in the dorsal region. The posterior roots appeared small and wasted, whereas the anterior roots, with the exception of C8 and D1 more particularly, were better represented. The cord as a whole was rather shrunken, as were many of the posterior root ganglia. The meninges over the convexity of the brain were somewhat thickened, as was the pia arachnoid over the base.

In addition to the brain and cord all the posterior root ganglia were taken for subsequent investigation. The nerves removed were the median, ulnar, sciatic and anterior tibial. The muscles taken were as follows:—On the right side, first, second, and third lumbricals, opponens pollicis, flexor brevis pollicis, abductor indicis, abductor minimi digiti, extensor communis digitorum, flexor sublimis digitorum, hamstrings, quadriceps and gastrocnemius; on the left, tibialis anticus, abductor pollicis, abductor minimi digiti, flexor brevis pollicis, flexor profundus digitorum. The muscles of the larynx, further, were submitted to microscopical examination.

SPINAL CORD.

1. *Weigert and Weigert-Pal*.—Sections were taken from every segment of the cord. Characteristic appearances were found, indicated in Figs. 4-7. It should be remarked, however, that the maximum posterior column degeneration was in the dorsal region. The posterior roots entering the cord at the level of C5 and above appeared normal. The posterior roots below this were in most instances grossly degenerated, whereas the anterior roots were more nearly normal, with the exception of the lower cervical and upper dorsal, in which a number of degenerated fibres were traceable. The fibres of the anterior horns and of the grey matter of the cord generally were in some

PLATE 19,

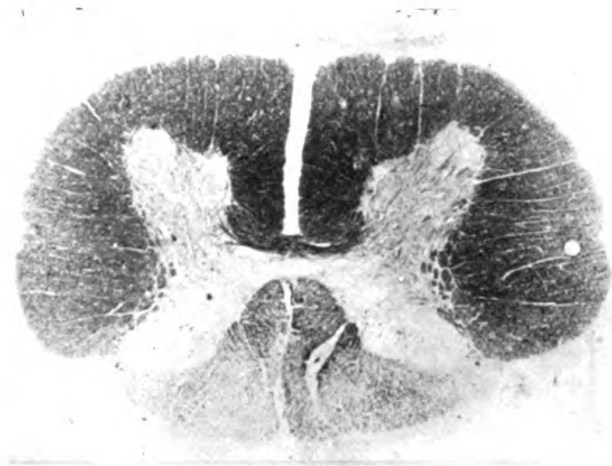


FIG. 6.



FIG. 7.

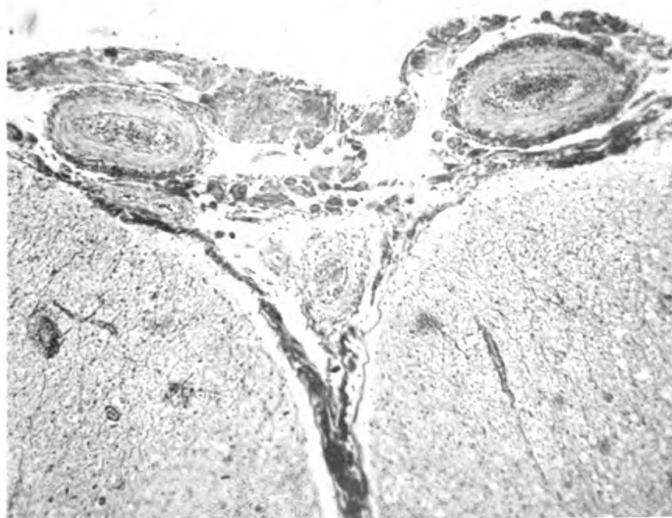


FIG. 8.

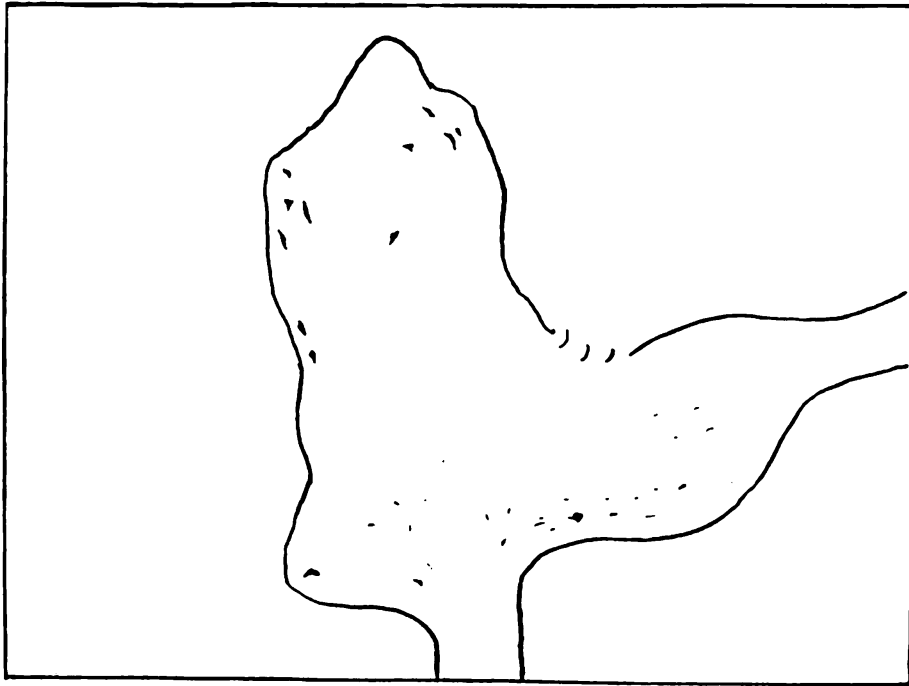


FIG. 10.

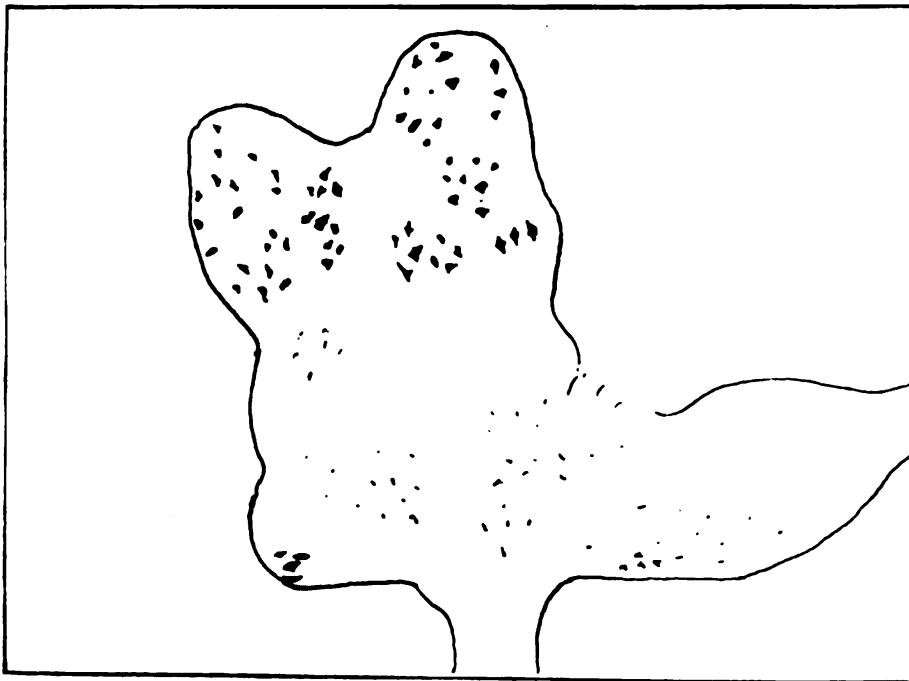


FIG. 9.

To illustrate Paper by Dr Wilson.

places somewhat sparse; the anterior horns, more particularly in the cervical enlargement, were somewhat shrunken.

2. *Hæmatoxylin-Van Gieson*.—The pia arachnoid was thickened, especially over the posterior columns. Many vessels of the membranes, and some of the larger ones of the cord, had thickened walls, the changes affecting chiefly the adventitia, and to a less extent the intima (see Fig. 8). All the vessels, however, were patent. Round many of them small cell infiltration was obvious.

3. *Nissl*.—The lower part of the sixth cervical segment, the seventh and eighth cervical, and the first dorsal were all cut from above down in strict serial section, and prepared by Nissl's method; the first sacral segment, similarly, was cut in serial section. Sections from other segments were also stained by the same process. The sections cut were 15μ in thickness, and the anterior horn cells in every second section were enumerated. This was a matter of considerable difficulty, inasmuch as they were so atrophic that to decide which were to be counted and which ignored was not easy. As a rule, all cells with nuclei were counted, but many others, which consisted of the shell, so to speak, with pigment centre, were also included, as long as they preserved the appearance of a cell.

(a) *Cell Enumeration*.—Throughout the segments examined the actual loss of anterior horn cells was extreme. Many sections were without any normal cell, *i.e.* normal in size or character of staining. Several sections, chiefly in the eighth cervical and first dorsal segments, were practically cell-less (I refer, of course, solely to the motor cells of the anterior horns). Thus in 103 serial sections there were 843 cells in the right horn and 734 in the left, an average of 8 and 7 respectively. In the normal cord there are something like 60 motor cells in each anterior horn of the lower cervical cord. The average in each of the segments examined in serial section was practically the same; it was rather lower, if anything, in the inferior than in the superior segments. Of the grouping of cells in the different levels, all regional subdivisions were involved. If the results of the examination are compared with the figures given in Bruce's "Atlas" of normal cord sections, the disparity is striking. I give the figures for two segments only.

Segment.	Cord, Case I.	Normal cord (one side).
C7 :	Antero-mesial— R. 1·4	9
	L. 1	
	Antero-lateral—R. 1·2	35
	L. 1·1	
	Postero-lateral—R. 4·6	16
	L. 2·7	
C8 (upper):	Antero-mesial— R. 1·3	4
	L. 1·1	
	Antero-lateral— R. 2·5	29
	L. 3·8	
	Postero-lateral— R. 3·9	33
	L. 2·8	
C8 (lower):	Antero-mesial— R. ·6	7
	L. 1·4	
	Postero-lateral— R. 3·2	31
	L. 3·7	
	Post postero-lateral—R. 6·6	21
	L. 4	

(Compare Figs. 9 and 10.)

In the first sacral segment the proportion of cells preserved was higher, their number being reduced by about one-third, or rather less than the normal.

In sections taken from other segments and stained by Nissl's method there was a reduction in the total number of cells of not more than one-third, and in some sections less than this. The cell enumeration, however, shows clearly that the maximum of loss is in the lower cervical region and first dorsal segment.

(b) *Nature of the Cell Change.*—Speaking generally, it may be said that in the lower cervical and first dorsal segments the cell change was of a sclerotic or atrophic type. The cells which persisted were as a rule shrunken and small: many were elongated and at the same time attenuated. In this state the cells stain more deeply than usual, as though shrinkage of the achromatoplasm confined the tigroid elements in a smaller space, so that the hue of the cell was dark in spite of differentiation. The nucleus takes on a bluish tint, and cannot be differentiated to a lighter colour, as in the normal cell. It, too, partakes in the shrinkage process. The nucleolus remained deeply stained. The cell processes also are readily traceable at first, inasmuch as



FIG. 11.

To illustrate Paper by Dr Wilson.

they, too, stain more deeply than usual. These appearances are well seen in the accompanying figures. The next stage is that the chromatoplasm becomes irregularly disintegrated and powdery, and is displaced to the outer layer of the cell, while pigment is deposited by degrees in the centre of the cell, the nucleus sometimes being displaced. The cell seems to become still smaller, more shrunken, more attenuated, until it may be represented by a mere shell of small chromatic granules surrounding a mass of pigment. Spindle-shaped shells of this sort—a kind of “shadow” cell—were very frequently observed in the affected segments. The type seems to be the outcome of an essentially chronic process (Figs. 11-16).

Out of something like two thousand cells counted, or more, the vast majority were of this sclerosed or atrophic type. A few in the cervical region, however, and a larger number in the lower part of the cord, seemed to be undergoing a change of a different nature. It is a change which is met with in less chronic conditions, and its features are familiar. The cell does not actually shrink, at first at least, but the alteration begins in the body of the cell round the nucleus, where the Nissl substance becomes powdered, the larger tigroid elements remaining unchanged at the periphery. Gradually the pulverisation of the tigroid continues; the cell takes on a more or less homogeneous blue tint; the nuclear membrane shows signs of shrinkage and may disappear; the nucleus usually assumes an excentric position. The granular elements commonly give place to pigment, while the nucleus may come to lie on the cell surface, and then be shed. The cell then dies, and all that is left to indicate its position is a little mass of pigment. Vacuolation of the cell body may occur, as an acute or subacute process. It is possible that these more acute changes are associated with the fact of the patient being bedridden, and may be indicative of a terminal infection (Figs. 17 and 18).

PERIPHERAL NERVES.

As already noted, the nerves taken were the median and ulnar on the left side, the sciatic and anterior tibial on the right. All of these seemed more or less normal on naked eye examination, with the exception of the ulnar, which was flattened and thin, and the nerve bundles were seen to be almost distinguish-

able one from the other, like fine white threads embedded in connective tissue.

1. *Weigert-Pal.*—Degenerative changes were more obvious in the ulnar than in the other nerves. Here it could be readily seen that the number of myelinated fibres was reduced; many sheaths were empty; many showed imbrication and fragmentation of the myelin. A frequent change noted was a swelling and honeycombing of the sheath. Yet there was a considerable number of more or less normal fibres to be found. Normal and degenerated fibres appeared side by side. Some were notably attenuated, and took the stain less well. The proportion of diseased fibres in the sciatic nerve was comparatively small.

2. *Hæmatoxylin-eosine.*—Considerable interstitial change was remarked on transverse section. Round individual fibrils the endoneurium was in some places thickened, the perineurium markedly so, subdividing the nerve into discrete bundles. Fatty invasion was in several places manifest. The vasa nervorum were also slightly thickened (Figs. 19 and 20).

Fibrillar stains were not employed.

MUSCLES.

1. *Hæmatoxylin-Van Gieson.*—Not all the muscles examined showed changes of equal intensity. Thus those which showed the profoundest degree of change were the small muscles of the thenar and hypothenar eminences, whereas there was less pathological alteration to be seen in the long flexors and extensors of the fingers, and in those of the wrist.

The flexor brevis pollicis of the right side may be taken as a type. A glance at the figures will reveal the remarkable degree of interstitial and parenchymatous change. The muscular parenchyma is so reduced as in some places scarcely to be traced at all. The muscle fibres are either isolated from each other by connective tissue, or broken up by longitudinal fission into a series of fine, muscular strands, which are invaded by central and sarcolemmal nuclei. Even where the fibres are thus greatly attenuated they may still be seen in many instances to preserve their cross striation (Fig. 21). On cross section these small fibres can be seen lying in collected masses, and in their immediate neighbourhood fibres of more or less normal size may persist

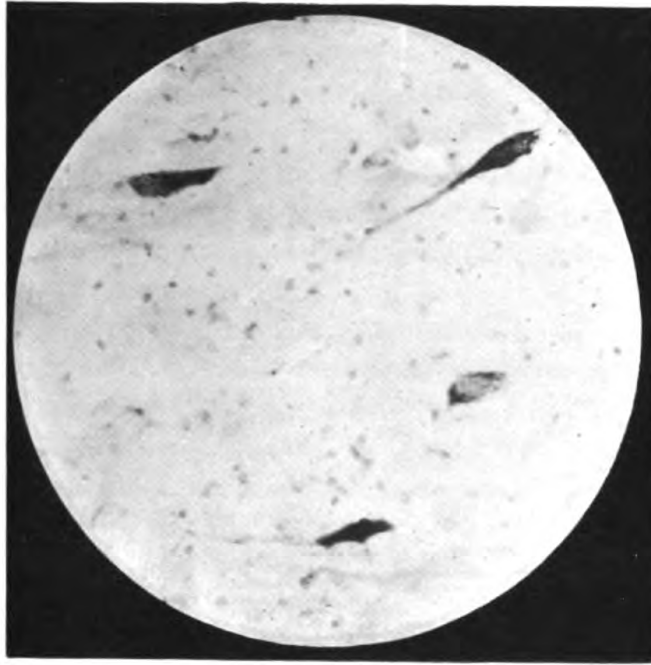


FIG. 12.

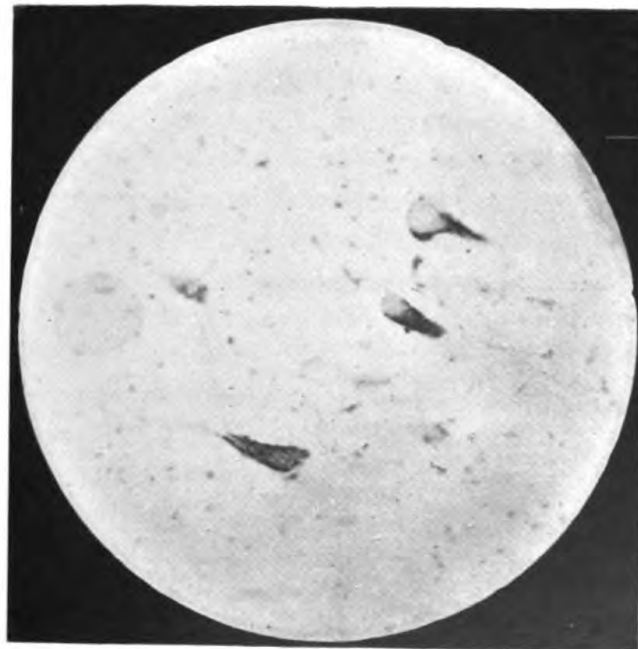


FIG. 13.

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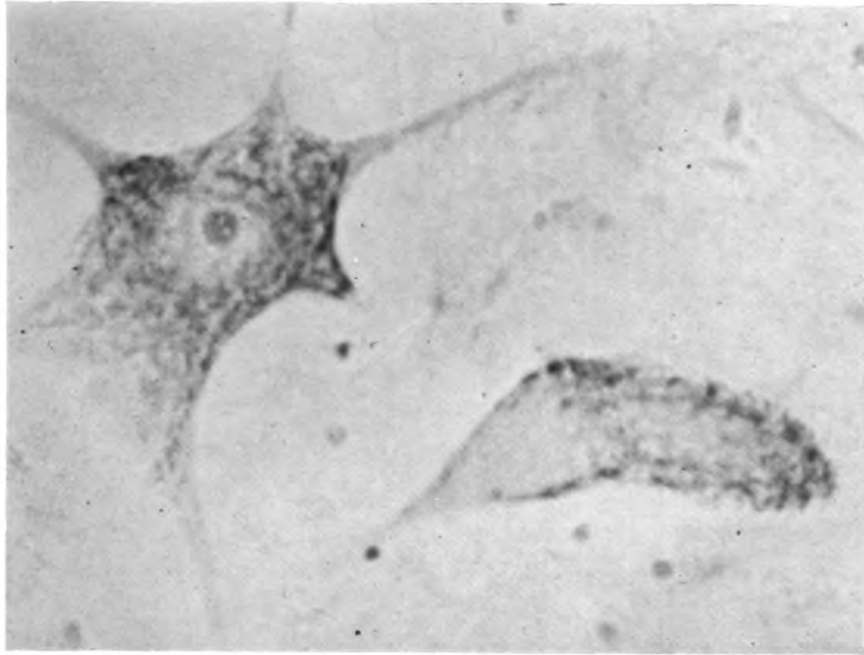


FIG. 14.



FIG. 15.



FIG. 16.

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(Fig. 22). The latter, however, have no longer the usual polygonal contour of healthy fibres, but are rounded off and separated from each other by invading connective tissue. In none of the scores of sections examined are any hypertrophied or giant fibres to be found, nor are there any obvious hyaline changes, or alterations in the staining reactions of the myoplasm. In some of the degenerated fibres the overgrown nuclei are confluent, and here and there are seen masses, irregularly cuboidal in shape, of deeply staining chromatin material, presumably of nuclear origin.

Everywhere the interstitial modifications are profound. All the blood vessels have greatly thickened walls. Active overgrowth of connective tissue is apparent, and fatty infiltration forms a large part of the pathological picture in many sections. The walls of some of the muscle spindles appear to be thickened; in some the muscle fibres seem more or less normal, in others they are fragmented. Central vacuolation is rare. There is an unusual spacing of the concentric sheaths of some of the spindles, and a few of them are characterised by increase of nuclei round and in the muscle fibres (Figs. 23-25).

In some of the muscles examined early interstitial change was the only abnormality detected, consisting in rounding off of the muscle fibres by thin strands of tissue. This change was irregular and patchy in its distribution. The first lumbrical on the right side was much more affected than the second and third. Sections taken from the muscles of the lower extremity showed, generally speaking, an interstitial change much less in degree than those of the upper extremity, certainly much less than in the muscles of the hands (Figs. 26 and 27).

No one of the eighteen skeletal muscles examined presented any appearance that is characteristic of true myopathy.

2. *Weigert-Pal-eosine*.—Interstitial changes in the intramuscular nerves, analogous to those already described for the peripheral nerves, were readily detected. In the case of the muscle spindles the majority of the fine myelinated fibres in relation to them were imbricated, and in some the myelin was partly fragmented (Fig. 28).

CASE II.—F. C., aged 40, came under observation in December 1904, with characteristic features of tabes in the shape of lightning pains, defective vision, ptosis, sluggish pupils, sphincter

troubles, Rombergism, and absent knee jerks. There was a history of a stroke two years previously in her sleep, when the patient awoke to find herself paralysed on the right side, with her mouth drawn to the right. For seven days she had difficulty in speaking. This hemiplegia, however, was entirely transient in nature, for when the patient came under observation there was no trace of it whatever. On examination the patient was found to present slight wasting of the muscles of the right arm and forearm, and marked wasting of the small muscles of the right hand. The right motor fifth was atrophic and very weak.

The condition progressed steadily during the next year or two; she became bedridden, and slight general emaciation set in, while the amyotrophy of the right hand became more pronounced. The patient died in October 1907.

At the autopsy the hemiplegia was found to have been due to a small lesion in one pyramid, caused by degeneration of the basilar artery. The central nervous system, many peripheral nerves, including branches of the motor fifth, and a number of pieces of muscle, from both affected and non-affected groups, were removed for subsequent examination.

Brief descriptions must suffice.

In the spinal cord the characteristic appearances of tabes were obtained by the Weigert-Pal process.

The eighth cervical and first dorsal segments were taken and cut in strict serial section for examination by Nissl's method. Enumeration was carried out as in the first case.

We first of all note a general diminution in the number of anterior horn motor cells on both sides of the cord, especially in the first dorsal segment. The total numbers are reduced by about two-thirds, as compared with the normal cord. There is, however, a notable difference between the two sides of the cord. In 61 sections from the first dorsal segment the total number of persisting anterior horn cells is on the left side 1251 and on the right side 778; the latter, therefore, is poorer than the former by 473 cells, an average of about 8 to each section. In 49 sections from the upper part of the eighth cervical segment there are 1059 cells on the left side and 780 on the right, a difference of 279 cells, an average of about 6 to each section. The deficit involves all the horn groups more or less equally; perhaps the antero-mesial and the postero-lateral



FIG. 17.

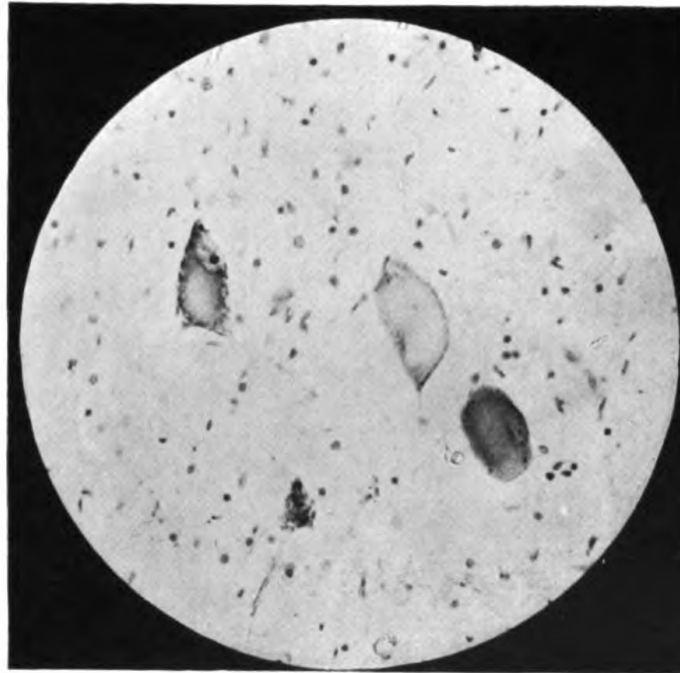


FIG. 18.

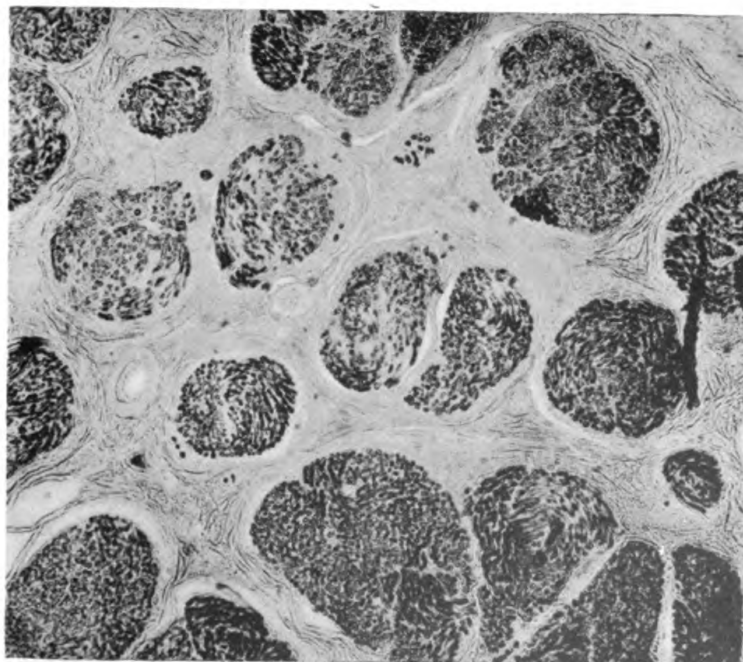


FIG. 19.



are the groups that have suffered most. In view of the fact that the total number of cells is reduced by two-thirds, the loss on the right side is proportionately greater, the side on which, clinically, muscular atrophy was pronounced.

As far as the nature of the cell change is concerned, the majority of the diseased cells present the atrophic changes already described. The actual number of cells showing changes which we are accustomed to regard as somewhat acute is rather higher than in the first case. It is noteworthy that the degeneration of the motor cells is irregular; many fairly normal cells lie in the closest conjunction with grossly atrophic cells.

In the motor fifth nucleus on the right side there is a very considerable loss of cells, associated with chronic degeneration of others.

As far as the peripheral nerves were concerned, no very definite change was discoverable in any of the pieces examined, nothing more than commencing interstitial alterations indicated by some increase of connective tissue and separation of nerve bundles. In particular the motor fifth nerve on the affected side showed little deviation from the normal.

The muscles examined revealed the interstitial changes which have already been fully described. The masseter and temporal on the affected side were examined both on transverse and on longitudinal section, and showed similar regressive changes to those found in the wasted small hand muscles; they need not therefore be further particularised.

If we summarise the pathological findings in Case I. we may express them thus:—In a typical case of advanced tabes dorsalis, with profound wasting of the upper extremities, especially of the hands, of the Aran-Duchenne type, the affected muscles are found to present only interstitial changes, evidently of secondary origin; the peripheral nerves also reveal changes, chiefly of the nature of a chronic interstitial neuritis; while the motor cells of the anterior horns are of grossly atrophic type where they have not vanished entirely. The affection of the anterior horn cells is noticeable throughout the whole cord, but its incidence is greatest where the centres for the wasted muscles are located, *i.e.* in the lower part of the cervical enlargement. In the lumbo-sacral cord the cells are relatively better preserved, and where this is

the case it is noteworthy that more or less normal and atrophic cells may lie in the closest juxtaposition.

In Case II. similar changes are found, though they are less advanced. The muscles supplied by the right motor fifth are completely atrophied, but the nerve shows relatively little regressive change, whereas the cells of the nucleus are either lost or degenerated. In addition, the clinical fact of the muscular wasting being more marked on the right side than on the left is associated with a correspondingly greater loss of anterior horn motor cells on the right side of the cord, in the cervical enlargement and first dorsal segment. In this case also the juxtaposition of normal and abnormal cells is noteworthy, and there is indication that there is a general diminution of cells throughout the whole cord. The muscles and nerves do not present any indications of primary change; what is found is evidence of secondary change.

When we proceed to endeavour to interpret the meaning of the pathological picture, there are several considerations to be kept in view. The chronicity of the cases, more particularly of the first, has to be remembered; where all the divisions of the lower motor neurone are implicated in a chronic condition its starting point is not always easy of detection. We have also to bear in mind the possibility of terminal infection influencing the picture. The helplessness of the patient, the disuse of his limbs consequent on their weakness, and the fact that in tabes disturbances of general muscular nutrition are frequent, are all points which ought not to be ignored.

If we argue by a process of exclusion, we cannot, I think, resist concluding that the changes enumerated above are of central origin.

1. The muscular changes are certainly not those of a primary myopathy. On the contrary, they suggest that chronic interstitial overgrowth, secondary to changes elsewhere, and replacing the parenchyma gradually, is the main feature in their pathogeny. The interstitial change no doubt has been intensified by disuse of the affected muscles.

Further, the grouping of the muscles involved is not radicular or peripheral, whereas they are represented in the cord in functional groups more completely than in any single nerve.

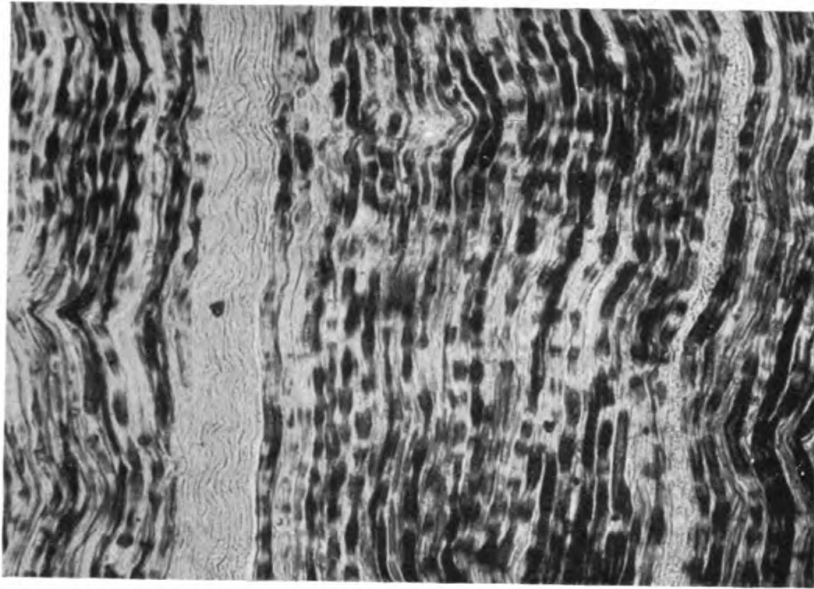


FIG. 20.



FIG. 21.

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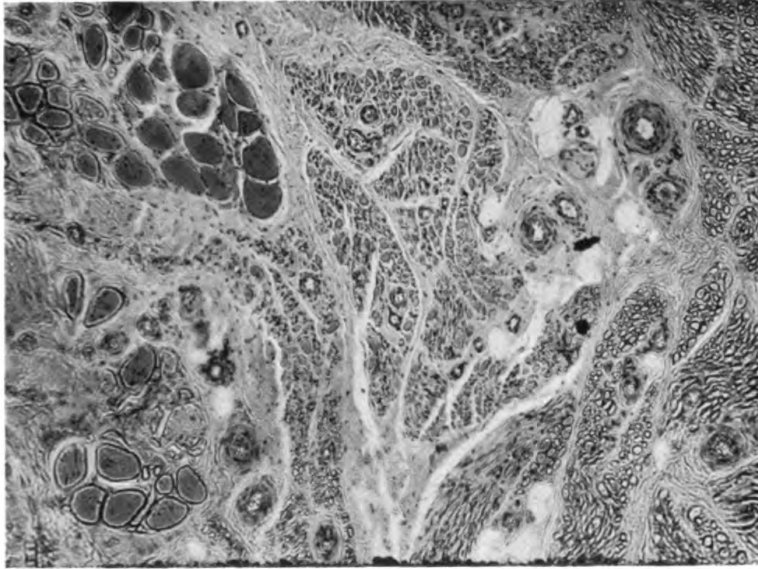


FIG. 22.

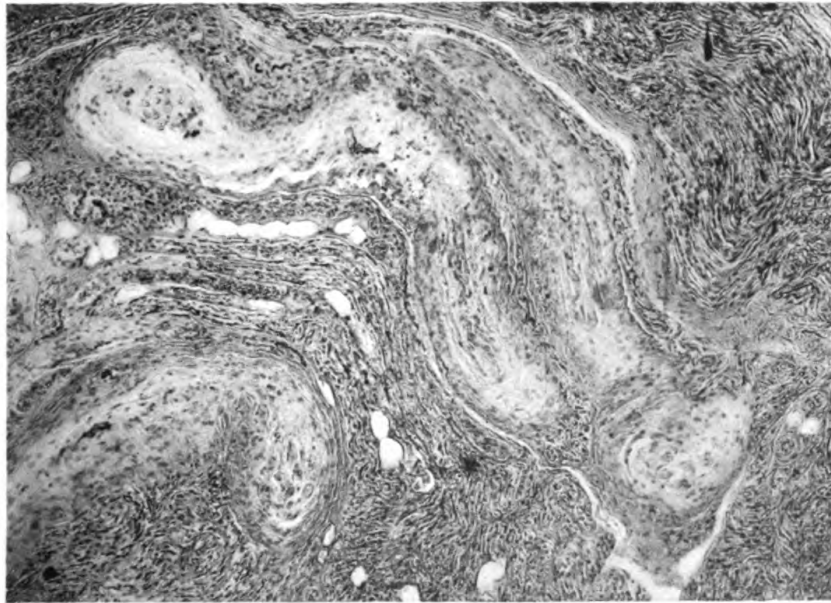


FIG. 23.

To illustrate Paper by Dr Wilson.

We have seen that the patient suffered from wasting, more especially of the muscles below the elbow, affecting the main functional groups unequally (extensors more than flexors, etc.), and this impairment of function with the corresponding defect of structure is more readily explicable from a central than from a peripheral standpoint.

2. The chronic changes in the peripheral nerves, of the nature of an interstitial neuritis, are of course noticeable, particularly in the ulnar nerve. But they are not so marked as the utter atrophy of the affected muscles might have led one to expect, nor so advanced as the changes in the anterior horn cells. It is difficult to interpret the exact significance of the neuritic alterations, but the facts just mentioned suggest that the changes are secondary to the cell changes. The latter are certainly more severe than the former, more widespread, and implicate cell groups corresponding to muscles whose peripheral nerves are not grossly altered while the muscles themselves were clinically greatly weakened. If we consider the lower motor neurone in its entirety, the maximum of pathological change is not in the nerves, but in the nerve cells. That there should be a complementary reaction of the affected nerves on their cord centres is no doubt probable, and the chronicity of the disease, coupled with the disuse of the limbs, has had a share in the production of the pathological result. The atrophic nature of the cell change is not such as to have been followed by the wholesale myelin degeneration that is found in acute lesions, rather has the process of regression of the motor cells been so slow that the corresponding nerves have altered even more slowly. It is improbable that an interstitial neuritis could have produced so complete a *réaction à distance* as to have effaced almost all the anterior horn cells of certain segments of the cord.

3. In tabes a certain amount of meningitis is a practically constant feature, and it may be that some retrograde degeneration of anterior horn motor cells is possible; but investigation of the cord sections in the present cases shows that the pathogenic importance of this meningitis is negligible.

4. The most striking feature of the pathology of these two cases is the disappearance of anterior horn cells. In Case II. the degree of correspondence between the cell atrophy and the muscular wasting is notable, and in Case I. the cell loss is

greatest where the muscular changes are most profound. It cannot, however, be gainsaid that the cellular changes are diffuse throughout the cord in both instances, though varying in degree. There are few indications of any really focal change, though some cell groups are rather more involved than others, and it has been impossible to determine any *strict* relation between wasted muscles and corresponding cord centres. The irregular way in which the cells are affected, almost normal ones lying beside profoundly atrophic ones, suggests that we are dealing with an affection which has originated in these cornual cells. In fact, the pathology resembles that of the myelopathic variety of muscular atrophy, and it is therefore difficult to resist the conclusion that in this variety of tabetic amyotrophy the lesion is central.

The method of production of the cellular degeneration remains to be discussed, and here again various possibilities may be considered.

1. The view that it is the result of a nutritional change occasioned by degeneration of posterior root collaterals extending into the anterior horns is not, I think, tenable in the present cases. The degeneration of the posterior roots is not at its maximum where the cell loss is most severe. And this severity is such that certain sections are practically cell-less. That mere absence of collateral support is sufficient to cause the cell disappearance seems questionable.

2. All tabetic cords show changes in the blood vessels, consisting mainly in reduction of their calibre and in small cell infiltration of their sheaths, in varying amount. The present cords provide no exception. But it does not appear that these changes are adequate to have occasioned by themselves alone the extraordinary diminution in the cellular elements. A relative ischæmia of the cord may have played a rôle in the matter, but the vascular changes are no greater than in many tabetic cords where there has been no definite amyotrophy at all.

3. It has already been remarked that the degree of meningitis and the interstitial neuritis are not, in my opinion, to be considered as more than merely supplementary in their effect on the cell atrophy.

4. The question therefore remains: Is this Aran-Duchenne muscular atrophy, with its corresponding central lesions, to be considered as an accidental and essentially different pathological

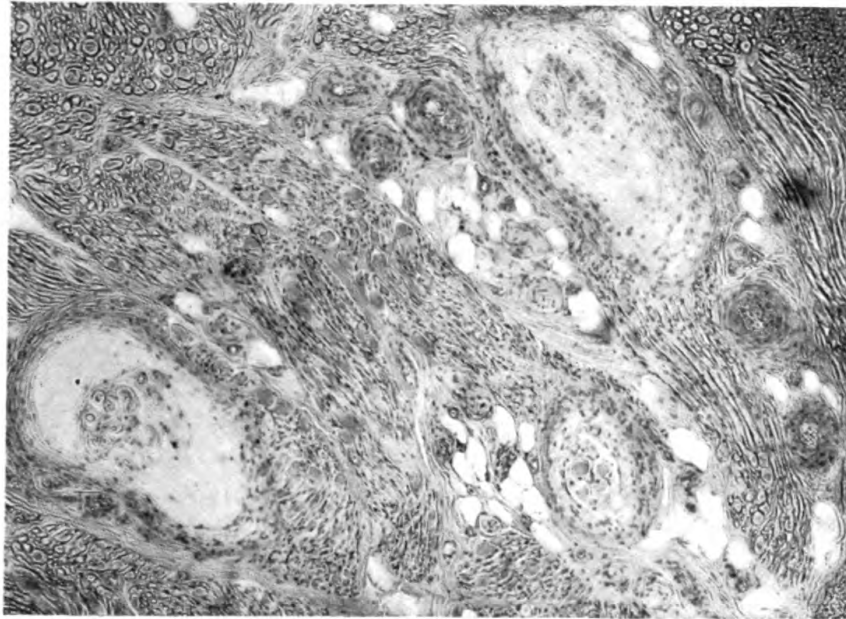


FIG. 24.

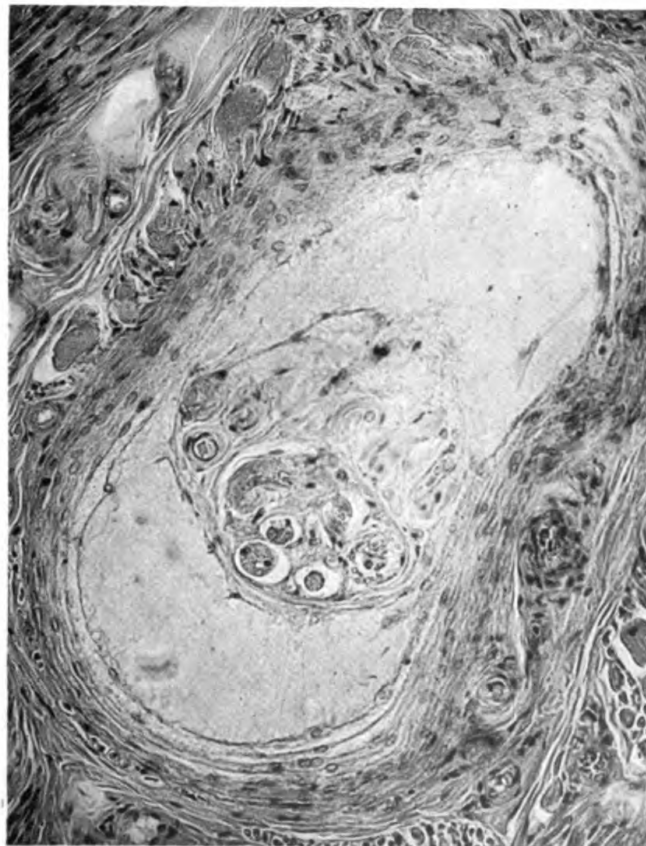


FIG. 25.

To illustrate Paper by Dr Wilson.

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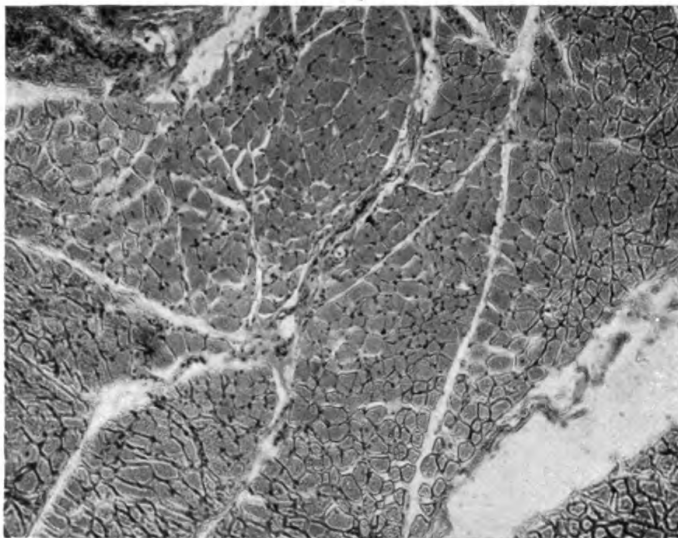


PLATE 28.

FIG. 26.

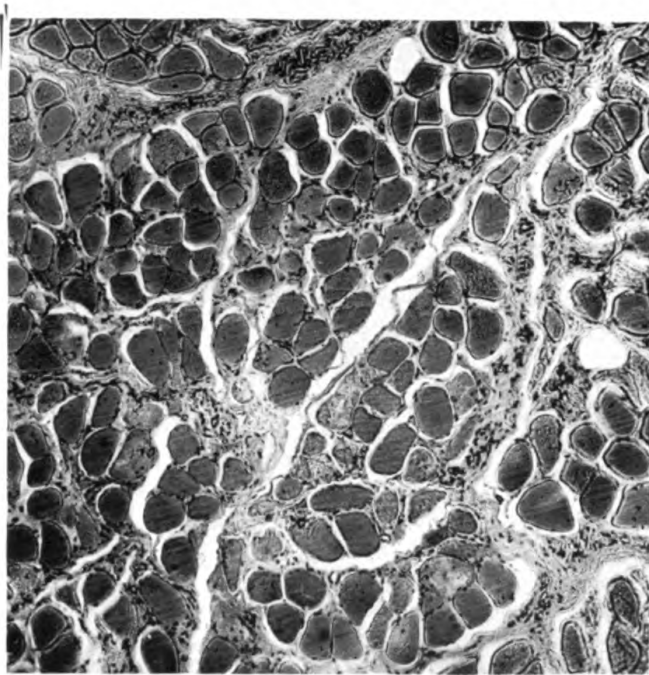


FIG. 27.

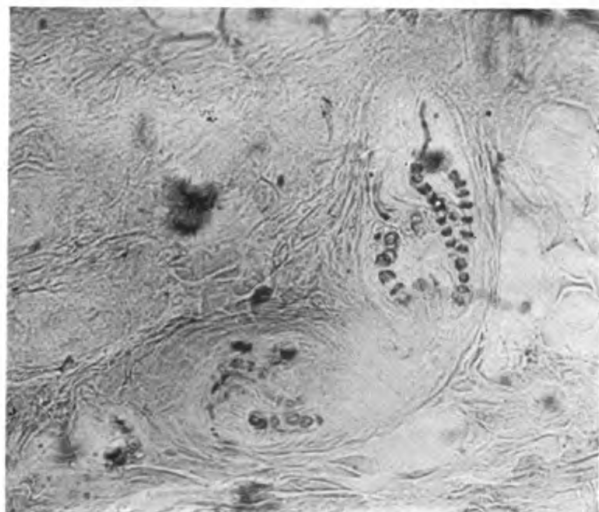


FIG. 28.

process superadded to the tabetic process, or can we explain it by invoking some factor which has also played a part in the production of the tabetic degenerations?

There is, I suppose, no *a priori* reason why two separate and distinct pathological processes should not have co-existed in the same cord, and some observers, notably Dejerine and Thomas, whose experience in the subject is very wide, do take up this attitude. "Pour quelques cas cependant, où l'évolution de l'atrophie musculaire a été différente de ce qu'elle est habituellement et où les lésions cellulaires sont très manifestes, on ne peut nier leur intervention dans la pathogenie de l'atrophie: il ne s'agit plus alors d'atrophie musculaire des tabétiques, mais bien de l'association d'un nouveau processus morbide, d'une poliomyélite, au processus tabétique, ou d'une forme spéciale du tabes."

We must remember, to begin with, that this form of tabes with muscular atrophy cannot be said to be very rare, so that the association of the two is probably not a mere coincidence. It is further to be remarked that the amyotrophy occurs *in the course of* tabes, and it is surely preferable to endeavour to demonstrate that only one factor, or at least one main factor, has been at work in the production of concurrent processes. The only factor we can invoke whose action can have been adequate is the preceding syphilis.

Now, Marie and Léri believe that in ordinary, *i.e.* non-tabetic, cases of progressive muscular atrophy syphilis as an etiological factor is very common. "Nous estimons que la syphilis est très fréquente dans l'étiologie de l'amyotrophie spinale. Nous nous basons sur la fréquence de la syphilis chez les malades que nous avons observés, et sur la grande nombre des observations où, sans même que la syphilis ait été explicitement reconnue, on la retrouve soit dans un épisode de l'histoire des malades, soit dans l'existence d'affections concomitantes (tabes, paralysie générale, etc.)." *A fortiori*, then, in a severe case of tabes, in which preceding syphilis is admitted, and where a progressive spinal amyotrophy develops and advances, to attribute it to the same agent is quite justifiable, especially since the diffuse and irregular nature of the cellular changes is just such as is produced by the action of a toxin. In the cases here reported there is clear pathological indication of preceding syphilis

in the meningitis and arterial changes, as has already been noted : it is therefore no mere hypothetical suggestion to implicate syphilis as the cause of the muscular atrophy.

Within recent years an increasing amount of evidence has been accumulating, which goes to establish the frequent incidence of syphilis on the lower motor neurone. Syphilitic poliomyelitis is not a simple *façon de parler*. Among those who have contributed either clinical or pathological material to the subject are Merle, Harris, Lhermitte, Léri, Léri and Wilson, Baudouin and Bourguignon, Hoffmann, Preobraschenski, Lannois and Lévy, Raymond and Rendu, Rose and Rendu, Vizioli, van Gehuchten, etc. There are, however, not wanting instances from older literature, such as those recorded by Goldflam and by Raymond. Some of these cases refer to acute syphilitic poliomyelitis, others to chronic syphilitic poliomyelitis; others, again, are cases of syphilitic meningo-myelitis with amyotrophy, and others still are tabetic cases. Without further particularising, there is abundant evidence that syphilis may affect the central nervous system in a multitude of differing ways; one of these is, apparently, a direct action on the anterior horn motor cells.

It is, no doubt, true that in most cases of syphilitic amyotrophy the underlying pathological condition has been a meningo-myelitis, and it has been held that, where this is wanting, to attribute the changes to syphilis is a mere assumption. In the present two cases of tabetic amyotrophy, however, the prime lesion is undoubtedly degeneration and disappearance of the anterior horn cells, without accompanying meningitis to any extent, and without meningo-myelitis, and by the method of exclusion I have endeavoured to show that it cannot be attributed to vascular changes, though these, of course, are present, nor to a *réaction à distance* from diseased peripheral nerves. Hence it seems to me that the preceding syphilis is the only factor that is left. There is nothing remarkable in attributing to the syphilitic toxin the possibility of a direct if chronic action on the cells. Other observers have adopted the same attitude. Further, the cases here reported are not unique.

The conclusions to be drawn may be expressed as follows :— Among the types of tabetic amyotrophy is one which, by its progressive nature and its functional distribution, is definitely of central origin, and analogous to the Aran-Duchenne type.

Though not common, it cannot be said to be a rarity. While no doubt some cases of this sort, especially some in which true tabetic symptoms are not prominent, are occasioned by a syphilitic meningo-myelitis, there are others, of which two are here reported, where the amyotrophy is the result of a chronic process affecting the anterior horn cells more or less directly, *i.e.* the accompanying vascular, meningeal, or peripheral changes are not sufficient to have produced it. In such cases it seems justifiable to conclude that the syphilitic toxin has been the *causa causans*, more particularly since the lesions are widespread, diffuse, and irregular. It may be said, then, that the amyotrophy is an associated symptom of syphilitic, as opposed to para-syphilitic, origin, although it is probable that ere long the term "parasymphilis" will become meaningless.

BIBLIOGRAPHY.

- Merle. *Revue Neurologique*, 1909, pp. 809, 877, 1429.
 Harris. *Transactions Neur. Section Royal Soc. of Medicine*, London, 1910.
 Lhermitte. *Semaine médicale*, 1908, p. 615.
 Léri. *C.R. Congrès de Bruxelles*, 1903.
 Léri and Wilson. *Nouvelle Icon. de la Salpêtrière*, 1904.
 Baudouin and Bourguignon. *Revue Neurologique*, 1910, p. 536.
 Hoffmann. *Neur. Centralblatt*, 1909, p. 1074.
 Preobraschenski. *Neur. Centralblatt*, 1908, p. 1069.
 Lannois and Lévy. *Echo méd. de Lyon*, April 1900, p. 100.
 Raymond and Rendu. *Revue Neurologique*, July 31, 1907, p. 762.
 Rose and Rendu. *Semaine médicale*, 1910, p. 217.
 Vizioli. Congress of Moscow, 1897: *Trans. Neur. Sect.*, p. 757.
 Van Gehuchten. *Névrose*, 1907, ix. 3.
 Goldflam. *Wiener Klinik*, 1893.
 Raymond. *Semaine médicale*, 1893, p. 56.
 Dejerine and Thomas. "Maladies de la moelle épinière," 1909, p. 673
 ("Traité de médecine," Brouardel-Gilbert, Vol. xxxiv.).
 Marie and Léri. "Traité de médecine," Bouchard-Brissaud, Vol. ix., 1904,
 p. 637.

DESCRIPTION OF FIGURES.

- Fig. 1.—Hands, Case I., showing wasting of interossei.
 Fig. 2.—The same, a year later, showing profound wasting of small hand muscles. Note the tendon of the long flexor of the left thumb in its course down that digit.
 Fig. 3.—The same left hand, taken from the side, to show the absolute loss of the thenar eminence.

Figs. 4-7.—Cord, Case I. (Weigert-Pal.)

Fig. 8.—Do. (Hæmatoxylin-van Gieson.) Thickening of spinal vessels and of membranes, with some small cell infiltration.

Figs. 9-10.—Drawings, to same scale, of sections from the upper part of the eighth cervical segment: Fig. 9 that of a normal cord, from Bruce's "Atlas," Fig. 10 from Case I. The loss of cells in the latter is extreme, and none of the remaining cells can be considered normal. (Nissl's stain.)

Fig. 11.—Drawings of various atrophic cells of the chronic type, from the cervical enlargement of Case I. Description in text.

Fig. 12.—Group of sclerosed atrophic cells from the first dorsal segment, Case I. (Nissl.) The cells are elongated and attenuated, and stain more deeply than usual, in spite of differentiation.

Fig. 13.—Another group of atrophic cells, more advanced, with pigmentary degeneration. From the eighth cervical segment.

Fig. 14.—Represents the only cell approximately normal found in the whole of the eighth cervical segment of Case I. Its nuclear membrane is indistinct, and its nucleolus is doubly vacuolated, however. Very highly magnified. (Nissl.)

Figs. 15-16.—Two sclerosed atrophic cells of the type described in the text. Note in particular the dark hue of the nucleus and of the cell generally, the shrinkage of the achromatoplasm, the absence of processes, and the extreme elongation. Same magnification as Fig. 14. Upper eighth cervical. (Nissl.)

Fig. 17.—Drawings of the more familiar type of subacute cell degeneration, with pulverisation of the tigroid and eccentricity of the nucleus, resulting in a somewhat "swollen" cell, as found in the sacral segments of Case I. (Nissl.)

Fig. 18.—A group of this type, from the first sacral segment, Case I. (Nissl.)

Fig. 19.—Transverse section, left ulnar nerve, Case I. (Pal-eosine.) Considerable interstitial change, also some parenchymatous.

Fig. 20.—Longitudinal section, same nerve. (Pal.) Imbrication, fragmentation, and honeycombing of myelin sheaths.

Fig. 21.—Right abductor minimi digiti. (Hæmatoxylin-van Gieson.) Breaking up of muscle fibres by longitudinal fission. Increase of nuclei.

Fig. 22.—Transverse section, same muscle. (Same stain.) More or less normal muscle fibres on the left, but their contours are rounded. On the right, grossly degenerated area. Thickening of blood vessels. Some fatty infiltration.

Fig. 23.—Left flexor brevis pollicis. (Same stain.) Longitudinal section of muscle spindles in a severely affected part of the muscle. Fragmentation of the muscle fibrils within the spindles.

Fig. 24.—Right flexor brevis pollicis. (Same stain.) General appearance of the muscle, including three muscle spindles.

Fig. 25.—One of the spindles from Fig. 24, more highly magnified. Vacuolation of some of its muscle fibrils. Spacing of the sheath of the spindle.

Fig. 26.—Right third lumbrical. (Same stain.) Slight commencing interstitial change.

Fig. 27.—Right opponens pollicis. (Same stain.) An advancing degree of the same.

Fig. 28.—Left flexor brevis pollicis. (Pal-eosine.) The nerves of a muscle spindle, showing imbrication and partial fragmentation of their sheaths.

THE VALUE OF THE VIBRATING SENSATION IN THE DIAGNOSIS OF DISEASES OF THE NERVOUS SYSTEM.

By R. T. WILLIAMSON, M.D. (Lond.), F.R.C.P.

THE vibrating sensation is sometimes of service in the differential diagnosis of certain diseases of the nervous system.

The term "vibrating sensation" is given to the peculiar vibrating or trembling feeling, which is noted when the foot of a vibrating tuning fork is placed over subcutaneous bony prominences or surfaces in many parts of the body. It has also been termed bone sensibility or pallæsthesia.

Egger, in France, especially directed attention to this sensation in 1899, and many papers on the subject have appeared in foreign medical literature.

I. METHOD OF TESTING.

Points of the body which are very suitable for testing this sensation are:—the styloid process of the ulna, the malleoli, the inner surface of the tibia, the sternum, the palms of the hands and soles of the feet, the nails of the fingers and big toes, and the anterior superior iliac spines. The vibrations of some tuning forks are felt well over most of the other subcutaneous bony prominences or surfaces. But the vibrations of other tuning forks are not felt distinctly over many bony prominences, though they are usually recognised distinctly at the points just mentioned.

A large tuning fork is usually necessary for testing. One which I have found very useful is supplied by Messrs Woolley, Sons & Co., chemists, of Manchester. It is $7\frac{1}{2}$ inches long, and marked 440, A1. An oval metal foot-piece is attached. If the tuning fork has no foot-piece attached, a coin (penny), placed between the foot of the tuning fork and the part tested, makes the vibrating sensation more distinct.

In testing the patient a few precautions are necessary. It is well to commence by placing the foot of the vibrating tuning fork over the sternum. The patient is asked what he feels. If he answers that there is a vibrating or trembling sensation, we know that he recognises the nature of the sensation. The vibrations are usually particularly well felt over the sternum, and usually they can be felt even through the clothing at this part. We then place the foot of the vibrating tuning fork over the points we wish to test in the limbs, and ask the patient if he feels the same vibrating or trembling feeling. It is well to make a few control tests, in order to be sure that the patient really feels the sensation. The patient's eyes should be closed and his ears stopped with the fingers. Then the foot of the tuning fork should be placed in contact with a bony prominence, first when it is vibrating and then when it is not vibrating. We ask the patient what he feels, and we note whether his answers are reliable or not on several tests. Another useful control test is to place a penny on the part we are testing, and then to press on it with the finger and afterwards with the foot of the vibrating tuning fork, the patient's eyes being closed. The patient is requested to say when he feels the vibrating sensation and when not. By a few control tests of this kind we can soon determine whether the patient's answers are reliable or not, and whether he really understands the nature of the test. Such control precautions are very important. In testing the vibrating sensation on the fingers, a useful method is for the examiner to place his own fingers under the fingers of the patient, and to apply the metal foot-piece of the vibrating tuning fork firmly in contact with the patient's fingers. If the examiner can feel the vibrations (transmitted through the patient's fingers), but the patient himself is unable to feel the vibrations, this is a clear indication of the loss of the vibrating sensation.

Conduction of the sensation.—The fibres or paths conducting

the vibrating sensation apparently do not decussate in the spinal cord. In many cases now on record, in which there has been a unilateral lesion of the spinal cord, the vibrating sensation has been lost on the side of the lesion below the level of the disease, whilst it has been normal on the opposite side.

In a case recorded by Bing, an extradural unilateral fibrosarcoma of the cervical region of the cord caused loss of sensation for pain, and temperature, and diminution of tactile sensation, on the side *opposite* to the lesion, whilst on that side the vibrating sensation was normal. But on the *same* side as the unilateral spinal lesion there was loss of the vibrating sensation, though the sensations for pain, temperature, and tactile impressions were normal on this side. There was impairment of the sensations of position and movement in the same parts as the loss of vibrating sensation (*i.e.* on the side of the spinal lesion). These observations confirm those previously recorded by Déjerine and others.

The vibrating feeling is probably not conducted upwards in the grey matter of the spinal cord. In a case of traumatic hæmatomyelia, recorded by Bing, there was marked affection of sensation for pain and temperature, but no diminution of the vibrating sensation. Post-mortem, the grey matter of the cord was found to be entirely destroyed at the seat of the lesion.

In one of my cases of syringo-myelia (of over twenty years' duration), in which there was marked atrophy of the hand muscles, and loss of sensation for pain and temperature on the hands and arms, but very slight impairment of tactile sensation, the vibrating sensation was quite normal and the sense of pressure was normal. This would indicate that the paths for conduction of pain and temperature sensations are not the same as those for the vibrating sensation.

According to Bing, the vibrating sensation is probably conducted upwards in the posterior columns of the white matter of the spinal cord.

In some cases of spinal disease (probably cases of combined postero-lateral sclerosis) the vibrating sensation is lost along with impairment of the muscular sense at an early period of the disease, whilst other forms of sensation are normal at this period.

II. THE VIBRATING SENSATION IN DISEASES OF THE NERVOUS SYSTEM.

I have found the vibrating sensation always present in health at the points already named, when a suitable tuning-fork has been used.

Parts which are particularly suitable for rapid testing are the malleoli, the inner surface of the tibia, and the styloid process of the ulna.

I have found the vibrating sensation present in the following diseases, even when the affection has been at an advanced stage, or when the symptoms have been marked:—acute anterior poliomyelitis of the infant and adult, amyotrophic lateral sclerosis, primary lateral sclerosis, paralysis agitans, progressive muscular atrophy, idiopathic muscular atrophy, neurasthenia.

The vibrating sensation is often lost, when other forms of sensation are lost, in disease of the spinal cord or peripheral nerves. But this is not always the case. As already mentioned, in hæmatomyelia, destroying the grey matter, though the sensations for pain and temperature are lost, the vibrating sensation may be present. Also in some cases of syringomyelia the same condition is met with, but in other cases of this disease the vibrating sensation is lost. In the very advanced case of syringomyelia just referred to, although the sensation for pain and temperature had been lost in the arms for many years, the vibrating sensation was felt quite well on the arms and legs.

In peripheral neuritis from alcoholism, diphtheria, influenza, and other causes, the vibrating sensation is very often lost on the legs (malleoli and tibiæ) at a very early period of the disease. Often at this early stage no other form of anæsthesia can be detected on objective examination; the loss of the vibrating sensation is, therefore, frequently of service, when symptoms of neuritis are few, in confirming suspicions of this disease roused by other symptoms. The loss of the vibrating sensation in these cases shows that the disease is not limited to the motor parts of the nervous system. In many cases of very early peripheral neuritis the symptoms may consist chiefly of (1) loss of the tendo-Achillis reflexes, (2) loss of the vibrating sensation (on the malleoli and tibiæ), and either (3) pain in the legs and tenderness in the calf muscles, or

(4) a sensation of numbness in the legs ; or the symptoms 3 and 4 may both be present. At this period the knee jerks may be present and no definite paresis, and no loss of sensation to touch, pain or temperature may be detected. Later the knee jerks disappear, and other forms of sensation are impaired or lost, and motor paralysis develops.

In diabetes mellitus the vibrating sensation is sometimes lost on the malleoli and tibiae, and on the feet, when there are no other signs of nervous affection or impairment of other forms of sensation. But in most of these cases other early indications of diabetic "neuritis" are present. Sometimes careful examination reveals only loss of the tendo-Achillis reflexes and loss of the vibrating sensation; whilst impairment of other forms of sensation cannot be detected, pain and tenderness are absent, and the knee jerks are present.

In other more severe cases of diabetic "neuritis," pain, tenderness, and hyperæsthesia are the prominent symptoms. Though there may, or may not, be a sensation of numbness and tingling; nevertheless on objective examination no loss of sensation to tactile impressions, pain, or temperature may be detected; and usually *the only objective sensory defect is loss of the vibrating sensation*, as tested by a vibrating tuning-fork placed with its foot on the soles of the patient's feet, on the malleoli, and on the inner surface of the tibia. The knee jerks may be lost in addition to the tendo-Achillis reflexes.

True paresis or paralysis, and anæsthesia to tactile sensation, pain, and temperature are very rare in diabetic neuritis.

It is interesting to note that Verneuil has drawn attention to the curious fact, that in cases of fracture in diabetic individuals the ends of the bones are remarkably insensitive (quoted by Naunyn).

In some cases of early tabes dorsalis the vibrating sensation is lost on the legs, though other forms of sensation to touch, pain and temperature may be quite normal. Hence, in suspected early tabes, when the symptoms are few, the loss of the vibrating sensation may be of diagnostic service as additional evidence in favour of the disease. Thus in a case in which the knee jerks and tendo-Achillis jerks were lost, there was a history of shooting pains in the legs, but the pupils reacted to light. There was very slight Romberg's symptom. No affection of sensation to

touch, pain or temperature could be detected, the muscular sense was normal, but the vibrating sensation was lost on the legs, and this was an additional symptom in favour of the diagnosis of tabes suggested by the other symptoms.

In "compression myelitis" from spinal caries, at the early period there is often no anæsthesia to touch, pain or temperature, and in addition to root pains and pains in the back, there is simply slight impairment of the motor power in the legs and changes in the reflexes. Yet at this early stage the vibrating sensation is often lost on the legs and at the anterior iliac spines, or higher. The loss of the vibrating sensation may thus be the first form of affection of sensation. At a later period anæsthesia to other forms of sensation often develops.

In spinal tumour (meningeal or intramedullary) impairment of sensation is such a frequent symptom that some physicians would regard total absence of anæsthesia, when the other symptoms have become well-developed, as a point against the diagnosis of tumour (except in tumour of the cauda equina).

According to Sterling the vibrating sensation may be the first form of sensation lost. Hence the testing of the vibrating sensation is of value in the differential diagnosis in cases of suspected tumour.

In spinal syphilis of various forms, and especially in Erb's form of spinal syphilis, the vibrating sensation is sometimes lost at the early period when other forms of sensation are normal; or it may be lost over a larger area than other forms of sensation.

In disseminated sclerosis often no objective signs of affection of sensation can be detected. But I have seen many cases of this disease in which the vibrating sensation was lost on the legs, when all other forms of sensation were unaffected. In some cases, of course, in addition to the loss of the vibrating sensation other forms of sensation are affected at a later period.

In certain cases of spinal disease loss of the vibrating sensation is associated with inco-ordination and loss of the muscular sense. Thus in a case of ataxia, probably due to combined posterior lateral sclerosis, the chief symptoms were:—inco-ordination of the movements of the legs and of the fingers, loss of knee jerks, Babinski's reflex on each side (but no ankle clonus), Romberg's symptoms, loss of the sensations of movements and of the direction of movements at the big toe joints, loss of the

vibrating sensation on both legs and arms, burning sensation in the legs. In this case the sensations to tactile impressions, pain and temperature were normal on the legs and arms, the pupils reacted to light, and there were no shooting pains in the legs.

In another case (probably combined postero-lateral sclerosis), at the early stage there was ataxia with slight loss of power in the legs, the knee jerks were present, and there was an extensor type of plantar reflex on each side. Sensation was normal to touch, pain, and temperature, but the vibrating sensation was lost on the legs. Seven months later ankle clonus had developed, the legs had become spastic and paralysed, and the muscular sense was lost in the legs. The vibrating sensation was lost, and there was loss of the sensations for touch, pain, and temperature in the right leg, and for touch in the left leg, and for touch on the lower half of the abdomen.

The association of loss of the vibrating sensation with loss of the muscular sense and astereognosis was illustrated by a case which I believe to be one of disseminated sclerosis (arm type). The vibrating sensation was lost on the left hand (fingers). There was very slight diminution (but not loss) of tactile sensation on the fingers of the left hand. There was astereognosis in the left hand, the patient being unable to recognise the nature of objects, coins, etc., placed in the hand when the eyes were closed. She was unable to feel and to recognise the direction of passive movements of the fingers when the eyes were closed. The sensations of pain and temperature were normal. In the right hand all the forms of sensation just mentioned were quite normal. The grasp and other movements of the right hand and arm were normal, but there was slight intentional tremor of the left hand and slight inco-ordination in the movements of the left fingers (in buttoning the clothes, etc.). Sensation in the legs was normal, with the exception of loss of the vibrating sensation on the malleoli of the right leg. When first seen the plantar reflexes were absent. Later there was a Babinski reflex on the left side, whilst the plantar reflex was lost on the right side. Ankle clonus was absent. The knee jerks were increased. There was distinct pallor of the temporal half of the right optic disc.

The patient was a healthy-looking female, aged 20. The illness had commenced with failure of vision in the right eye and numbness in the left leg, and to a less extent in the left

arm. Nystagmus and scanning speech were not present. In this case the association of loss of the vibrating sensation with astereognosis and loss of the muscular sense in the left hand, was of interest. (Spastic paraplegia developed later.)

When anæsthesia in a limb is due to lesion of a superficial cutaneous sensory nerve, one would expect that in many cases the vibrating sensation would be felt in the region of cutaneous anæsthesia, owing to the deep sensory nerves being unaffected. I have met with cases in which this has been the condition.

In anæsthesia due to brain disease the vibrating sensation may be lost along with other forms of sensation, but I have not yet met with any cases of brain disease in which the vibrating sensation was affected alone, or before other forms of sensation.

III. DIAGNOSTIC VALUE OF LOSS OF THE VIBRATING SENSATION.

1. The vibrating sensation is a *very delicate test for detecting slight affection of the sensory part of the nervous system*. The vibrating sensation may be lost though the sensations of touch, pain, and temperature are felt quite well.

Before concluding that a lesion is confined strictly to the motor parts of the nervous system, *i.e.* before concluding that sensation is quite normal, the vibrating sensation should be tested.

In diseases strictly limited to the motor parts of the nervous system the vibrating sensation is not lost, even at an advanced period of the disease. Thus I have found it quite normal at an advanced stage of amyotrophic lateral sclerosis, primary lateral sclerosis, progressive muscular atrophy, paralysis agitans, and in marked cases of acute anterior poliomyelitis of the infant and adult. When the vibrating sensation is lost, this fact indicates that the disease is affecting also sensory structures, and thus the symptom may be of much diagnostic value.

2. In certain affections in which anæsthesia (partial or complete) develops as the disease progresses, the *vibrating sensation may be the first form of sensation affected*. Hence at the early period of such diseases this form of sensation may be lost before the sensation for touch, pain, and temperature have become affected. These diseases have been already mentioned. It is interesting to note, that in cases in which there has been partial

recovery from an affection which had caused anæsthesia, the vibrating sensation may remain absent when other forms of sensation have recovered. Thus in a case of compression myelitis following an injury to the back, through a fall, there was total paralysis of the legs, with anæsthesia and spinal deformity. Many years later the motor power had returned in most of the leg muscles and sensation had become normal, except that the vibrating sensation was not felt on the legs. In patients who are recovering from peripheral neuritis (alcoholic) I have observed that there has been loss of the vibrating sensation after anæsthesia to other forms of sensation has disappeared.

3. The loss of the vibrating sensation is of diagnostic value at the early stage of several affections, when the symptoms are slight and few. The loss of the vibrating sensation is then of service as an *additional* sign confirming suspicions aroused by other symptoms (as at an early stage of peripheral neuritis).

4. In the *differential diagnosis* between several affections the vibrating sensation is often of service.

Thus in the differential diagnosis between peripheral neuritis and acute anterior poliomyelitis of the adult, affecting both legs, or both legs and both arms, I have found the vibrating sensation of service.

Both diseases may cause paralysis of the legs, with loss of knee jerks and tendo-Achillis reflexes and wasting of muscle: in both diseases the bladder and rectum are unaffected. In acute poliomyelitis the vibrating sensation and other forms of sensations are not lost. In peripheral neuritis sensations for touch, pain, and temperature may be felt quite well at first (or there may be only slight impairment of tactile sensation), but the vibrating sensation is often lost, even at a very early stage of the disease. Hence in the differential diagnosis in such cases, loss of the vibrating sensation would be against acute anterior poliomyelitis and in favour of peripheral neuritis.

Thus in a case of total paralysis of all four limbs (in a total abstainer) after an attack of influenza, suspicions of acute anterior poliomyelitis were raised. The symptoms were chiefly motor paralysis, with loss of the knee jerks and tendo-Achillis reflexes. The bladder and rectum were not affected. The muscles of the calves and arms were tender on pressure; sensation for tactile impression was not lost; but the vibrating sensa-

tion on the legs was completely lost. This last symptom was in favour of peripheral neuritis, and the clinical course, and complete recovery after many months, indicated that this diagnosis was correct.

In a case of paralysis of all four limbs which came under my observation soon afterwards, the vibrating sensation and all other forms of sensation were present, although the paralysis was marked. This fact was of great diagnostic service. The exact distribution of the paralysis, and the symptoms and course of the disease, pointed to acute anterior poliomyelitis. Some improvement occurred, but well-marked permanent paralysis of many muscles remained, and there can be no doubt the diagnosis of poliomyelitis was correct.

In the diagnosis between acute anterior poliomyelitis and acute myelitis, the loss of the vibrating sensation is against the former and in favour of the latter diagnosis.

Thus in a case of paralysis of both legs, of acute onset, the diagnosis of acute anterior poliomyelitis appeared probable at first. The bladder and rectum were not affected. The knee jerks were present. The right tendo-Achillis reflex was lost, the left was very sluggish. There was no ankle clonus, no Babinski reflex, no Oppenheim reflex. The plantar reflexes were present, but very feeble. Sensations of touch, pain, and temperature were felt quite well. But the vibrating sensation was lost on both legs, and this was against the diagnosis of acute anterior poliomyelitis. The further course of the disease showed that the case was not one of anterior poliomyelitis. At a later date the bladder became paralysed. Ankle clonus developed on the left side, and the Babinski reflex on both sides. Tactile anæsthesia developed on the legs. After a long illness the paralysis disappeared, and recovery occurred. There can be little doubt, from the clinical history, that the case was one of acute myelitis (probably disseminated myelitis).

In a case of spastic paralysis of the legs, of twenty years' duration, the fact that the vibrating sensation was present at the end of this period was one point, along with others, in favour of the diagnosis of primary lateral sclerosis. In this case there was no wasting of the small muscles of the hands, no affection of the bladder or rectum, and no signs of affection of any part of the spinal cord except the lateral pyramidal tracts.

In any case in which the diagnosis of amyotrophic lateral sclerosis appears probable, if the vibrating sensation is lost, this fact would be evidence decidedly against the disease just named. (The vibrating sensation is not lost, even at a very late stage of amyotrophic lateral sclerosis.)

When the patient presents the symptoms to which the term spastic paraplegia is applied the cause is sometimes disseminated sclerosis of the spinal form. The characteristic symptoms of disseminated sclerosis are often absent in such cases, and the diagnosis from primary lateral sclerosis or amyotrophic lateral sclerosis has to be considered. If the vibrating sensation is lost on the legs, this would exclude the two diseases just mentioned. In disseminated sclerosis, as already stated, this sensation is often lost. In spastic paraplegia, due to spinal caries or tumour, the vibrating sensation may be lost at the early stage, when other forms of sensation are not affected. This symptom would be evidence against the diagnosis of primary lateral sclerosis or amyotrophic lateral sclerosis, and would be consistent with the diagnosis of compression myelitis from vertebral caries or spinal tumour.

I have tested the vibrating sensation in many cases of paralysis agitans, but have always found it present, and normal, even in advanced cases of the disease. In any case in which the differential diagnosis between this disease and other affections is under consideration, the loss of the vibrating sensation would be definite evidence against paralysis agitans.

In hemianæsthesia, if the vibrating feeling is lost when the foot of the tuning-fork is placed on the lateral edge of the sternum on the side of the tactile anæsthesia, but felt when placed on the other lateral edge of the sternum, in my opinion the case is probably one of hysterical, or functional hemianæsthesia, or malingering. In hemianæsthesia due to organic disease, and in *some* cases of hemianæsthesia due to hysteria or malingering, the vibrating sensation is felt when the foot of the tuning-fork is placed on both lateral edges of the sternum. The unilateral loss of the vibrating sensation over the sternum is of diagnostic value; but when this sensation is felt on both sides of the sternum, no conclusion can be drawn from this fact as to the diagnosis.

The vibrating sensation is occasionally of service in the

diagnosis of other forms of hysteria or malingering. Thus, in a case recently sent to me, the patient, a healthy-looking young man, complained of paralysis and anæsthesia of the right leg. Twelve months previously he had fallen whilst carrying a heavy weight at his work. There was no fracture or dislocation of the limbs, but he complained afterwards of pain in the metatarsal bone of the right great toe. This continued six months. An exploratory incision was then made by his medical attendant at the painful part, but nothing abnormal was found. The wound healed well and the pain ceased. But soon after the operation anæsthesia of the right foot and leg developed. When I saw the man he could not be made to perform any movement of the right foot. Yet on making passive movements at the ankle, often contractions of the tibialis anticus and calf muscles occurred. There was no wasting of the muscles of the right leg. The knee jerks and the tendo-Achillis reflexes were present. The plantar reflex was absent on the right side—normal on the left. There was complete loss of sensation to touch, pain, and temperature, and to the vibrating sensation on the foot and lower two-thirds of the right leg. The upper limit of the anæsthesia was a sharply-defined line encircling the leg at right angles to the long axis of the limb. Janet's test for hysteria or malingering was conclusive. The patient's eyes were closed. He was touched lightly with the finger, first on the upper third of the leg where sensation was normal, and then on the lower two-thirds, on the part where he had stated he could not feel sensations of touch, pain, and temperature, when examined a few minutes previously. He was asked to say "Yes" when he felt the touch, and "No" when he did not feel it. The normal and the anæsthetic parts were repeatedly and successively touched lightly. Each time the former was touched the patient said "Yes," and at the exact moment when the anæsthetic part was touched he said "No." There could be no doubt that the case was one of hysteria or malingering. The vibrating sensation was of service in the diagnosis. When the foot of the vibrating tuning-fork was placed over the inner surface of the tibia, just below the upper margin of the anæsthetic area, no vibrating sensation could be felt; but when applied over the inner surface of the tibia, about one inch higher, on the part where sensation was normal (just above the upper margin of the anæsthetic area),

the vibrations were felt distinctly. This I believe to be evidence in favour of hysteria (or malingering). The tuning-fork was one which produced a very marked vibrating sensation. The vibrations were well transmitted to the upper end of the tibia and felt all over the tibia, when the foot of the vibrating tuning-fork was placed at a corresponding point on the tibia of a normal individual. In this patient, had the anæsthesia been organic, when the foot of the vibrating tuning-fork was placed on the tibia, just below the upper limit of the anæsthetic area, I believe the vibrations transmitted along the bone to its upper end would have been felt, and the vibrating sensation thus perceived. The fact that the patient stated that no vibrating sensation was felt (when the foot of the tuning-fork was placed on the inner surface of the tibia just below the upper limit of the anæsthesia of the skin) was, in my opinion, an indication that the case was one of hysteria or malingering.

REFERENCES

- Egger. *Journal de physiologie et de path. générale*, 1899, i., p. 511.
 Williamson, R. T. *Lancet*, April 1, 1905 (giving references to earlier papers), and *British Med. Journal*, July 20, 1907; "Diseases of the Spinal Cord," London, 1908, p. 79.
 Bing. *Correspondenz Blatt für Schweizer Aerzte*, Jan. 1, 1910, and *Neurologischer Centralblatt*, 1910, p. 173.
 Sterling. *Deutsche Zeitschrift für Nervenheilkunde*, 1905, Bd. 29, p. 98.
 Flatau and Sterling. *Ibid.*, 1906, Bd. 39, p. 207.

Abstracts

ANATOMY.

MOTOR LOCALISATION IN THE BRAIN OF THE GIBBON, (401) CORRELATED WITH A HISTOLOGICAL EXAMINATION.

F. W. MOTT, E. SCHUSTER, and C. S. SHERRINGTON, *Proc. of Roy. Soc.*, July 3, 1911, p. 67.

MOTOR localisation in the gibbon has not been hitherto determined experimentally, although Mott had shown that the great use which this animal makes of its arms and hands could be correlated with a remarkable expansion of the cortex in the precentral region, as shown by the development of a broad gyrus,

extending from the middle of the precentral region to form the second frontal convolution. This view has been confirmed in this paper, where an account of the effect of stimulating different points of this region is given, followed by a histological examination. The most characteristic feature of the gibbon's brain is the great forward extension of the intermediate precentral area, which is most marked in the region of the middle frontal convolution. The area occupied by the granular frontal cortex (Campbell's frontal cortex) becomes thus much restricted, and, above the sulcus rectus, occupies only a small space near the frontal pole.

A. NINIAN BRUCE.

LOCALISATION OF THE MOTOR AREA IN THE SHEEP'S
(402) **BRAIN BY THE HISTOLOGICAL METHOD.** JESSIE L. KING, *Journ. of Comp. Neur.*, June 15, 1911, Vol. xxi., No. 3, p. 311.

THIS paper is stated to be preliminary to a complete histological survey of the cerebral cortex in the sheep. Here only the cortex of the superior frontal gyrus is described. A short description of the lamination is given, which is of the five-layered type. The Betz cells are well-marked, very rich in Nissl granules, and tend to be grouped into "nests." The smallest cells are found in the anterior part of the gyrus, where the head and face area is situated, and the largest in the region of the splenial fissure, the area from which limb movements are most easily obtained, the exact area which these cells occupy extending a little beyond that which responds to electrical stimulation. (See abstract in this *Review*, July number, p. 378).

A. NINIAN BRUCE.

THE PYRAMID TRACT AND OTHER DESCENDING PATHS IN
(403) **THE SPINAL CORD OF THE SHEEP.** JESSIE L. KING, *Quart. Journ. Exper. Physiol.*, Vol. iv., No. 2, June 1911, p. 133.

REMOVAL of the motor area in the sheep is not followed by paralysis, and the degenerated fibres form only a small bundle of fine fibres which decussate in the lower part of the medulla oblongata, but cannot be followed further than the first cervical segment.

Lesions in the medulla and spinal cord, however, show the presence of two well-developed descending paths; the one, consisting of coarse fibres, is found in the dorsal part of the ventro-lateral column, and extends into the sacral region. It probably represents the rubro-spinal tract of other animals; the other, a

large ventral ventro-lateral path, is also composed of coarse fibres, is directly connected with the ventral horn cells, and can be followed into the sacral segments. Injury to either of these tracts causes invariably partial paralysis, from which the animals do not entirely recover in a fortnight. This, together with the small amount of motor disturbance, following a lesion in the motor area strongly supports Schäfer's view that in the lower mammals the volitional impulses from the brain pass down by these tracts, and that the pyramidal tract is phylogenetically a young tract.

A. NINIAN BRUCE.

**THE LAMINA TERMINALIS AND ITS RELATION TO THE
(404) FORNIX SYSTEM.** JOHN CAMERON, *Journ. of Anatomy*, April 1911.

THE arcuate fissures of the embryonic brain are of great morphological importance, in virtue of the fact that the whole of the area of cerebral wall included between these becomes traversed in a fore-and-aft direction by longitudinal fibres. The latter may all be included under the heading of *fornix system*. The above area becomes folded upon itself in a downward direction about the middle of the third month of embryonic life. The result is that the two halves come into close opposition, thus forming the lateral boundaries of a groove or "gutter." The bottom of the latter is formed by the lamina terminalis, whilst its lateral walls become the para-terminal bodies.

The fornix fibres are developed from the neuroblasts of the lamina terminalis and para-terminal bodies. The author has applied the term *neuro-fibroblasts* to these cell elements. The processes of the latter fuse together to form what has recently been termed by Held the *neurencytium* or the *syncytium* of Cameron and Milligan. In this cytoplasmic material a delicate fibrillation develops, thus giving rise to the axons of the fornix system. The histogenesis of each of these axons is thus multicellular in character. These conclusions confirm recent investigations by the author on the development of the auditory nerve, the optic nerve, and the spinal nerves.

The corpus callosum divides the fibres of the fornix system into supra-, intra- and infra-callosal groups. The first of these is represented by the striæ longitudinales. The intracallosal group and those fibres which lie in the para-terminal bodies constitute the pre-commissural fibres of the fornix, whilst the meeting of the fibres at the bottom of the gutter forms its anterior pillars. The psalterial fibres of the fornix appear to develop later than the fore-and-aft system. These above observations indicate that the striæ longitudinales are integral parts of the fornix system, a statement

which receives confirmation from the study of a human brain *minus* a corpus callosum recently described by the writer.¹

AUTHOR'S ABSTRACT.

THE NERVUS TERMINALIS IN URODELE AMPHIBIA. PAUL (405) M'KIBBEN, *Journ. of Comp. Neur.*, June 15, 1911, Vol. xxi., No. 3, p. 261.

THE nervus terminalis is the name given to a bundle of un-medullated nerve fibres associated with the olfactory nerve and connected with the forebrain. It has been previously described in certain fishes and in anuran amphibia. In this paper the presence and course of this nerve is noted in several tailed amphibians. Its fibres pass from some point in the peripheral nasal region to the preoptic nucleus and hypothalamus, end processes of fibres being described in the preoptic nucleus. No nerve cells were found which the author considered were actually related to this nerve, those cells found in the nasal capsule which resemble ganglion cells being regarded as mast cells of connective tissue.

A. NINIAN BRUCE.

THE OLFACTORY NERVE AND THE NERVUS TERMINALIS (406) OF AMEURIUS. C. BROOKOVER and T. S. JACKSON, *Journ. of Comp. Neur.*, June 15, 1911, Vol. xxi., No. 3, p. 237.

THIS paper consists of an account of the early embryology of the olfactory nerve of Ameiurus to discover the relation between it and the nervus terminalis. They are both found to arise from a common ectodermal placode, and are intimately related to one another during development and in adult structure. The nerve cells in the nasal capsule are regarded as the ganglion cells of the nervus terminalis, which is considered a part or component of the olfactory nerve. Since it develops contemporaneously with the blood vessels, it is thought to be vasomotor in function.

A. NINIAN BRUCE.

VARIATIONS OF THE FIRST RIB, ASSOCIATED WITH (407) CHANGES IN THE CONSTITUTION OF THE BRACHIAL PLEXUS. F. WOOD JONES, *Journ. of Anat. and Physiol.*, Vol. xlv., April 1911, p. 249.

THE author reaffirms his previous view that the groove found upon the upper surface of the first rib, and known as the "sulcus sub-

¹ *Journal of Anatomy*, July 1907.

claviæ," is occupied, and almost certainly caused by the lowest cord of the brachial plexus and not the subclavian artery, and bases his statements upon an examination of the relation of the brachial plexus to the first rib in forty cases in the post-mortem room.

None of his subjects possessed cervical ribs, but in one, a girl aged 7 years, the first thoracic ribs were rudimentary, and the author considers that with advancing age the pressure of the nerve trunks might manifest itself as a brachial neuritis in such cases, and he suggests that some of those cases described as cervical ribs, in which the artery is found lying above the rib, are in reality examples of rudimentary first rib, as in all cases of true cervical ribs the artery is not elevated above the cervical rib.

A. NINIAN BRUCE.

**THE RELATIONS OF THE THORACIC OPERCULUM CONSIDERED
(408) IN REFERENCE TO THE ANATOMY OF CERVICAL RIBS
OF SURGICAL IMPORTANCE.** T. WINGATE TODD, *Journ. of
Anat. and Physiol.*, April 1911, p. 293.

THE author considers that the groove on the first rib (the sulcus subclaviæ, B.N.A.) may be occupied by either the subclavian artery or the lowest brachial nerve cord, or by both, and that, on the right side in right-handed people, the nerve plexus tends to be in closer contact with the rib than on the left side.

Thirty cases of cervical ribs were examined, eight of which presented no symptoms during life. In every case they were bilateral. Symptoms arise usually between the ages of twenty and thirty, and were invariably associated with the nerves, which become "stretched" over the rib, a condition which will be accentuated by certain consequences of the growth of the body, namely, the relative widening of the chest, the growth of the clavicle, and the sinking of the pectoral girdle. The author thus regards the nervous symptoms in cases of cervical ribs to be caused by an exaggerated form of the normal relation existing between the brachial plexus and the first rib; and the arterial symptoms to the action, directly by the scalenes and indirectly of the diaphragm, on an artery with a further and more tortuous course to pursue than is usual.

A. NINIAN BRUCE.

THE DEVELOPMENT OF THE ELASMOBRANCH PITUITARY.
(409) P. T. HERRING, *Quart. Journ. of Exp. Physiol.*, June 1911,
Vol. iv., No. 2, p. 183.

THE pituitary body of the elasmobranch differs from that of mammals, birds, and the bony fishes, since saline extracts produce

no immediate physiological action when injected into the blood vessels of a mammal. The active principle found in the pituitaries of mammals, birds, and teleosts is associated with a tissue of nervous origin (*pars nervosa*), closely surrounded by epithelial cells (*pars intermedia*). The early development of the elasmobranch pituitary closely resembles that of the mammalian pituitary, except that there is no invagination of the cerebral vesicle to form an infundibular lobe, the pituitary thus developing entirely from buccal epithelium. There is thus no development of neuroglia, and the absence of a physiologically active principle coincides with the absence histologically of that combination of epithelial cells and neuroglia which gives rise to the hyaline bodies in mammals, birds, and teleosts.

A. NINIAN BRUCE.

PHYSIOLOGY.

EXPERIMENTS ON THE PATHS TAKEN BY VOLITIONAL
 (410) **IMPULSES PASSING FROM THE CEREBRAL CORTEX**
TO THE CORD: THE PYRAMIDS AND THE VENTRO-
LATERAL DESCENDING TRACTS. E. A. SCHÄFER, *Quart.*
Journ. Exp. Physiol., Vol. iii., No. 4, 1910, p. 355.

SECTION of the pyramidal tracts in the medulla oblongata in the monkey is followed by a paralysis which is not complete and persistent; while section of the ventro-lateral tracts alone produces at least as complete and persistent paralysis in the monkey as does section of the pyramidal tracts themselves, a result which is produced even when the pre-pyramidal tracts are not included in the lesion. The question is then discussed, whether the paralysis produced by section of the ventro-lateral tracts is due to the severance of an encephalo-spinal path, or to loss of tone of the neuro-muscular apparatus of the cord. Since excitation of the cortex cerebri by strong faradic currents may fail to evoke movements of the limbs, the paralysis must be due to the severance of a path of volition between cortex and cord, which, although less direct than the pyramidal tract, is probably the primary path and the only one which occurs in vertebrates below mammals.

A. NINIAN BRUCE.

THE ACTION OF DRUGS UPON THE CEREBRAL VESSELS.
 (411) W. E. DIXON and W. D. HALLIBURTON, *Quart. Journ. Exp.*
Physiol., Vol. iii., No. 4, Dec. 1910, p. 315.

STIMULATION of the cervical sympathetic, the ganglion stellatum, the central end of the cut spinal cord and the vasomotor centre in

anæsthetised animals fails to give decisive evidence of alterations in the calibre of the cerebral vessels.

The authors removed the brain in the dog and perfused the cerebral vessels through the basilar artery, the carotids being previously tied, the fluid escaping from the torn sinuses and veins. They found that adrenaline, pilocarpine, and muscarine produced some dilatation, though they always produce marked constriction of systemic vessels. The cerebral vessels thus respond in a manner similar to the pulmonary and coronary vessels. It is probable that the dilator action is confined to the larger vessels. Barium, lead, veratrine, and pituitary extract cause some constriction, and probably act directly upon the muscle.

A. NINIAN BRUCE.

**EXPERIMENTS ON THE RESTORATION OF PARALYSED
(412) MUSCLES BY MEANS OF NERVE ANASTOMOSIS. R.**

KENNEDY, *Proc. Roy. Soc.*, 1911, July 3, p. 75, and *Brit. Med. Journ.*, July 1, 1911, p. 14.

AN account is here given of ten experiments (three monkeys and seven dogs) in which the facial nerve was cut and a spino-accessory or hypoglossal anastomosis performed. In six cases this was done immediately, in the remaining four after an interval of one month.

The author concludes that in any case of facial paralysis due to division or compression of the facial nerve, where spontaneous recovery fails and reunion is impossible, a spino-accessory or hypoglossal anastomosis holds out the best prospects of recovery. The date of commencing recovery and ultimate result is the same whether anastomosis follows immediately, or one month after, the section of the nerve. The only way to make an efficient union is to cut completely across all the nerve fibres in both nerves. Restoration of function appears to commence slightly sooner in hypoglossal than in spino-accessory anastomosis, but the resulting paralysis is much less objectionable when the spino-accessory is cut than the hypoglossal, and if the peripheral segment of the substitute nerve is to be left unattached, the hypoglossal paralysis is not justifiable.

A. NINIAN BRUCE.

THE ACTION OF ANIMAL EXTRACTS ON MILK SECRETION.

(413) SCHÄFER and MACKENZIE, *Proc. Roy. Soc., B.*, Vol. 84, July 3, 1911, p. 16.

Two methods of estimation were used—one by the tying of fine canulæ into the nipples, the other by an incision into the mammary tissue, the drops being recorded by an electro-magnetic dropper.

Cats and dogs were used. Animal extracts were injected intravenously. The posterior lobe of the pituitary body was found to contain a powerful galactagogue substance, soluble in water, insoluble in alcohol, and indestructible by boiling. A second dose was effective, but in a less degree than the first. Corpus luteum was also found to contain a galactagogue substance, constant in its action, but less powerful than pituitary extract. Corpus luteum in one experiment gave a serous flow in a non-lactating cat. No drug was found to have any effect as a galactagogue, and atropine did not inhibit the action of the galactagogues. Nerve section and stimulation showed no effect on secretion.

K. MACKENZIE.

PATHOLOGY.

THE PATHOLOGY OF PAPILLOEDEMA. LESLIE PATON and (414) GORDON HOLMES, *Brain*, March 1911, p. 389.

THIS fine piece of work is based on the study of sixty eyes, mostly obtained within a very short time of death, the main object being to study the histological changes which the presence of an intracranial tumour may produce in the retina, disc and optic nerve. Ten of the eyes were from cases of other cerebral diseases, the other fifty including specimens in every stage of papilloedema. All save one had been under observation during life.

The one predominant feature of optic neuritis, choked disc, or, as the authors prefer to call it, papilloedema, is a simple oedema which separates the nerve fibres in the disc and its neighbourhood, but rarely invades the retina. It may affect the extra-bulbar portion of the nerve as far back as the point of entrance of the central vessels.

It produces the swelling and the other characteristic ophthalmoscopic features. The vascular changes consist mainly in venous and capillary congestion. Hæmorrhages are also present frequently — these are due partly to the venous engorgement, partly to the stretching and rupture of the small capillaries that are involved in the swelling. These features are also seen in the disc and its immediate neighbourhood. In late stages the affected vessels may become occluded by endothelial proliferation.

In the great majority of cases there was no evidence of any inflammatory process in the papilla or in the optic nerve. In those where there was a slight round-cell perivascular infiltration it was merely round a few vessels, and was evidently a secondary process. The degenerative and atrophic changes that occur in the nerve fibres and ganglion cells can be best explained as secondary to the oedema. These changes are beautifully illustrated, and

they show very clearly that the so-called cytoïd bodies are simply portions of degenerated nerve fibres.

Their conclusion is that this condition, as it occurs in association with varied intracranial pressure, is in its essential nature an œdema. Their observations, and a consideration of the physiology of the retinal circulation, lead them to infer that the œdema of the nerve head is due to two factors, namely, venous engorgement and lymph stasis. The venous engorgement is due to the rise of intravenous pressure that is necessary in order that circulation should be maintained in the intravaginal portion of the central vein where this is subjected to an increased sheath pressure. The increased sheath pressure is also the origin of the second factor, the obstruction to the lymph drainage from the papilla.

J. H. HARVEY PIRIE.

NOTE UPON THE EXAMINATION, WITH NEGATIVE RESULTS,
(415) **OF THE CENTRAL NERVOUS SYSTEM IN A CASE OF**
CURED HUMAN TRYPANOSOMIASIS. F. W. MOTT, *Proc.*
Roy. Soc., Jan. 24, 1911, Series B., Vol. 83, p. 235; *Lancet*,
Feb. 25, 1911, p. 500.

THIS case is that of a man, aged 30, who was found to be suffering from trypanosomiasis in June 1905, and was treated with inorganic arsenic for eighteen months. In 1906 he contracted syphilis, and was treated with mercury. In 1908 he was considered to be in excellent health. In 1910 he caught pneumonia and died. Lumbar puncture was only performed once, three months before death, and no trypanosomes nor lymphocytosis were present. Portions of the cerebrum, cerebellum, and medulla were examined histologically, but no trace of the characteristic meningeal and perivascular infiltration, nor of gliosis, was found. This case, however, does not prove that sleeping sickness is curable, as Mott contends that the diagnosis can only be made when there is proof that the trypanosomes have invaded the sub-arachnoid space.

A. NINIAN BRUCE.

CIACCIO'S METHOD FOR THE DEMONSTRATION OF LIPOIDS.
(416) E. T. BELL, *Journ. Med. Research*, Vol. xxiv., No. 3, June 1911,
p. 539.

CIACCIO recently introduced a modification of Weigert's myelin stain, by which it is claimed that the lipoids in sections of any tissues may be distinguished from the neutral fats. Ciaccio's fluid is a formalin-bichromate-acetic mixture, and at first he thought that only lecithin is stained by his technique—that the other fatty

bodies, not being fixed by the bichromate treatment, are dissolved in the alcohol and xylol used in clearing and embedding. Ciaccio no longer apparently believes that only lecithin is shown, and (1910) uses the term lipoids (lipoidi) to designate the substances shown by his method.

A short résumé is given of the work of various writers who have endeavoured to explain the principles underlying Weigert's myelin method, especially that of Smith, Mair, and Thorpe (1908-1910). Unsaturated fatty substances, *e.g.* triolein, after potassium bichromate fixation, may be taken through fat solvents and subsequently stained—a molecule of the oxide of chromium having been attached to each of the unsaturated fatty acid radicals in triolein.

By means of numerous tests with fatty substances the author found that potassium bichromate acts upon droplets of neutral fat in the tissues as well as upon the lipoids, but the size of the droplet of neutral fat is a factor of great importance. He considers that Ciaccio's method is a valuable one for the study of fatty substances in the tissues, that it gives, however, only a rough distinction between the neutral fats and lipoids, and that it by no means shows all of the fatty substances present.

Following Smith and Dietrich the author suggests the following modification of Ciaccio's method:—

1. Three pieces of tissue are fixed for twenty-four hours in a 10 per cent. solution of potassium bichromate in a paraffin oven at about 54° C.

2. The tissue is then washed for several hours in running water and embedded in paraffin in the usual way.

3. The sections are stained on the slide with Sudan iii. and hæmatoxylin.

JAMES W. DAWSON.

**BEITRAG ZUR KENNTNIS DER SOGENANTEN KÖRNCHE-
(417) ZELLEN DES ZENTRALNERVENSYSTEMS. CIACCIO,**

Ziegler's Beit. z. path. Anat., Bd. 50, H. 2, 1911, S. 317.

AUTHOR investigates the nature of the cells found so frequently in the central nervous system in pathological conditions, characterised by the presence of fat granules in their protoplasm, and variously known as wandering cells, macrophages, epithelioid cells, granule cells, foam cells. As regards the origin of these cells various views have obtained in the past. Ribbert distinguished two varieties—one derived from the leucocytes, the other from the endothelium of the perivascular lymph sheath. Sanarelli, on experimental grounds, regarded them as of connective tissue origin, and of the nature of fibroblast. Similar views were held by Stroebe. Many

other investigators have worked at the question with somewhat similar results.

The author has studied the question in pathological material in cases of brain syphilis and brain tumour; also experimentally in dogs by infecting them with Eberth's bacillus and diphtheria toxin; also in dogs and rabbits by producing aseptic wounds of the brain, or by irritating the brain substance with tincture of iodine or carbolic acid. As regards staining methods—Nissl, van Gieson, Weigert's elastic tissue, eosin-orange-toluidin (Ciaccio), Unna-Pappenheim were all employed. Also special methods by the author for studying lipoids.

In the first series of observations, by infecting animals the author observed the formation of granular cells from connective tissue cells, more especially those of the adventitia of vessels. The granules were proved to be lipoid in reaction. The author places these cells in his category of "lecithin cells" or "interstitial lipoid cells."

In his second series of experiments, by irritating the brain substance locally, the author made similar observations, the "interstitial lipoid cells" being readily distinguished from other cells containing lipoids—leucocytes, plasma cells, neuroglia, and nerve cells.

The author concludes as follows from these observations, and from a study of cases of brain syphilis and tumour.

The names commonly applied to these granular cells are for various reasons objectionable.

Lipoid-containing cells may be divided into the following groups:—

1. Lipoid substance can be demonstrated in different types of cell elements. They are the expression of a more or less modified function. They are found in nerve cells, neuroglia, endothelium, and muscle cells of vessels. In these cells the presence of lipoids indicates alteration in metabolism. On the other hand, similar substances are found in inflammatory cell elements, viz., leucocytes, plasma cells, polyblasts, and giant cells from similar reasons. The presence of the lipoid is not indicative of degenerative process.

2. Other cells contain lipoids as the result of degenerative processes. These can be recognised by the character of their nuclei.

3. Other mesenchymatous cells may contain lipoids from having digested blood capsules, etc.

4. Others, again, may contain lipoids without any degenerative processes, the presence of these substances being associated with their function.

These last cell elements the author has named "interstitial lipoid cells." They are of mesenchymatous origin. They can arise, according to the author, from adventitia cells and from connective tissue cells.

JAMES MILLER.

THE SUPRARENAL GLAND IN DIPHTHERITIC TOXÆMIA.

(418) **(PRELIMINARY CONTRIBUTION.)** RITCHIE and A. NINIAN BRUCE, *Quart. Journ. of Exp. Physiol.*, June 1911, Vol. iv., No. 2, p. 127.

THE suprarenal glands in guinea-pigs dying after inoculation with diphtheric toxin are greatly congested, red, and swollen. The above paper is confirmatory of the results already described by Luksch and Elliot, that, under such conditions, the medulla of the suprarenal capsules becomes exhausted of its adrenalin. In the less acute types of infection complete exhaustion is found, while in the more acute types considerable diminution in the amount of adrenalin occurs. There is no neutralisation of diphtheria toxin by adrenalin, nor of adrenalin by diphtheria toxin, and no evidence was found of an interaction between diphtheria toxin and suprarenal gland tissue.

A. NINIAN BRUCE.

CLINICAL NEUROLOGY.**INJURY AS AN ETIOLOGICAL FACTOR IN THE CAUSATION (419) OF SOME WELL-DEFINED NERVOUS DISEASES.** W. B.

WARRINGTON, *Med. Chron.*, June 1911, p. 121.

RELATIONSHIP OF INJURY TO CERTAIN CONDITIONS OF

(420) **THE SPINE AND SPINAL CORD AND THEIR DIFFERENTIAL DIAGNOSIS.** *Ibid.*, July 1910, p. 215.

NEURASTHENIA. *Ibid.*, Dec. 1910, p. 137, and Jan. 1911, p. 1.

(421)

TRAUMATIC MYELITIS. *Ibid.*, Mar. 1911, p. 1.

(422)

THE AFTER LATER EFFECTS OF HEAD INJURIES. *Ibid.*, Feb.

(423) 1911, p. 273.

INJURY AS AN ETIOLOGICAL FACTOR IN THE CAUSATION

(424) **OF ORGANIC NERVOUS DISEASE.** *Ibid.*, April 1911, p. 3.

THE first paper mentioned above forms the last of a series of seven short essays dealing with the possible effects of injury in the causation of diseased states of the nervous system, other than the well known gross anatomical lesions.

The writer considers what is known regarding the rôle of injury in the causation or aggravation of the symptoms of tabes, disseminated sclerosis, amyotrophic lateral sclerosis, progressive muscular atrophy, syringomyelia, paralysis agitans, cerebral tumours, and general paralysis.

The range of the earlier papers is sufficiently indicated by the titles, and the object of the writer has been to concisely set forth

the state of our present knowledge on these, to some extent, disputable matters, which are yet of much importance, especially from the medico-legal aspect. AUTHOR'S ABSTRACT.

CASE OF SYRINGOMYELIA, WITH SYMPTOMS PRECIPITATED
(425) **BY TRAUMA.** FEARNSIDES, *Proc. Roy. Soc. of Med.* (Neurol. Section), Vol. iv., No. 8, June 1911, p. 34.

THIS case is that of a man, aged 48, who complained of a tight feeling associated with pins and needles in the right side of his head and neck, and general nervousness. Six years ago he had influenza. Five years ago he thinks he must have ricked his back, for his spine became twisted, but this never caused him any trouble. Two and a half years ago he jammed his right thumb, the wound suppurating. Following upon this the muscles of his right hand and forearm began to waste and the fingers to be drawn up, a condition aggravated by a fall from a scaffold about six months ago, on to his right shoulder, cutting open the scalp. The wound suppurated. He himself dates his illness from this accident. Together with the muscular changes, analgesia to pin-prick and to temperature was present everywhere above Thor. 4, although tactile sensibility was everywhere perfect. The case was considered one of syringomyelia, the trauma being quite accidental.

A. NINIAN BRUCE.

ZUR BEHANDLUNG DER ISCHIAS MIT EPIDURALEN
(426) **INJEKTIONEN.** GLIMM, *Munch. med. Woch.*, No. 8, 1911, S. 408.

DR P. GLIMM, of Klütz, in this paper claims priority in the use of this method of treatment in Germany. He has treated seven cases and is well satisfied with the results and their permanence. So far he has treated only those cases of sciatica which have defied ordinary treatment. Of his seven cases five were completely freed from pain. Two showed temporary improvement, but the pain returned. One of these he afterwards relieved by Bier's method of lumbar anæsthesia, but lost sight of the case.

In technique he follows Cathelin, and for his later cases has used exclusively Schleich's No. 2 solution; he considers 20 c.c. the standard quantity for an injection. He considers it particularly important that when anæsthesia has been secured—usually ten minutes after injection—a bloodless nerve-stretching should be undertaken, believing that by this addition to the treatment the percentage of failures is diminished.

He has used epidural injection in a case of coccygodynia due

to a fall, with surprisingly good result, and has cured four out of five cases of nocturnal enuresis by the same treatment, the fifth case suffering from commencing tuberculosis of the bladder.

A. G. HAY.

CASE OF TIC DOULOUREUX ILLUSTRATING THE ANÆSTHESIA
(427) **PRODUCED BY ALCOHOL INJECTION OF THE SUPERIOR**
MAXILLARY AND SUPRA-ORBITAL NERVES. HARRIS,
Proc. Roy. Soc. of Med. (Neurol. Section), Vol. iv., No. 8, June
1911, p. 52.

A SHORT account of the case of a woman, aged 43, who suffered from attacks of severe neuralgia for six years, at first in the forehead, and later in the cheek, nose, and upper gums. 10 m. of 90 per cent. alcohol, preceded by a few drops of 2 per cent. eucaïne, were injected into the right supra-orbital nerve, and two days later also into the superior maxillary nerve at the foramen rotundum. Pain since then had entirely ceased. The anæsthesia fades away gradually during twelve months to two years.

A. NINIAN BRUCE.

THE ANATOMICAL EXPLANATION OF THE PARALYSIS OF
(428) **THE LEFT RECURRENT LARYNGEAL NERVE FOUND**
IN CERTAIN CASES OF MITRAL STENOSIS. GEORGE
FETTEROLF and GEORGE WILLIAM NORRIS, *Amer. Journ. Med.*
Sc., 1911, cxli., 625.

THERE are now on record eleven autopsied and twenty-six clinically reported cases in which recurrent laryngeal paralysis was associated with, and apparently the result of, mitral stenosis. Among the autopsied cases the vocal paralysis was attributed to direct compression on the part of the auricle or its appendix in seven; to cardiac displacement, traction, etc., in one; to the effects of a patent ductus arteriosus in two; and to indirect compression upon the pulmonary artery in two.

Having made a careful study of the anatomical relations in hardened preparations, the authors conclude that the indirect mechanism may be a variable one, but that, when compression is accountable for the recurrent paralysis, it must always be caused by the aorta being squeezed between the left pulmonary artery and the aorta or the aortic ligament. Anything that will dilate or force upwards the left auricle, the left upper pulmonary vein, or the left pulmonary artery would tend to cause the condition. The anatomical relations are such that direct pressure of any portion of a dilated left auricle upon the aortic arch is impossible

W. T. RITCHIE

**THE INFLUENCE OF SALICYLATES ON THE CARDIAC LESIONS
(429) OF CHOREA.** E. A. COCKAYNE, *Quart. Journ. of. Med.*, 1911,
iv., 336.

AN analysis of 780 cases of chorea, of which 355 were given salicylates and 425 received other treatment. There was clinical evidence of onset or fresh lighting up of endocarditis, myocarditis, or pericarditis in seventy-seven cases, of which thirty-nine were not treated, and thirty-eight were treated with salicylates. The salicylates have apparently no influence, either in preventing the micro-organisms of rheumatism from entering the heart or in checking their further activity, when once established there.

W. T. RITCHIE.

**POST-DIPHTHERITIC PARALYSIS OF THE ACCOMMODATION.
(430)** JOSEPH CLOTHIER, *N.Y. Med. Journ.*, Feb. 18, 1911.

THE favourite seat of the lesion is the ciliary muscle, which controls the accommodative apparatus. In the majority of cases the paralysis of the accommodation exists alone, for while under physiological conditions the sphincter iridis and the ciliary muscle act in conjunction, it is only occasionally that the palsy of the accommodation is accompanied by paralysis of the sphincter iridis and the resultant dilatation of the pupil.

The paralysis normally comes on suddenly during early convalescence, and bears no relation to the severity of the attack or the variety of the diphtheria.

The usual complaint is blurring of distant vision and inability to see to read or write, both eyes being affected.

The prognosis is good.

A typical case is recorded.

D. K. HENDERSON.

**EARLY CARDIAC PARALYSIS AND HEMIPLEGIA IN DIPH-
(431) THERIA.** CRESSWELL BURROWS, *Brit. Journ. Child. Dis.*,
1911, viii., p. 311.

AMONG 1364 cases of diphtheria admitted to the North-Eastern Fever Hospital in London during the triennium 1908-10, only two developed hemiplegia. Both had had a severe initial angina, for which they were treated with large doses of anti-toxin, and both had early cardiac involvement. Precocious palatal palsy and albuminuria occurred. The first case, a girl aged $4\frac{1}{2}$ years, developed left hemiplegia on the forty-third day and made an incomplete recovery; the second case, a boy aged $3\frac{1}{2}$ years, in whom right hemiplegia developed on the sixteenth day, died on the twenty-first, death being preceded by diaphragmatic paralysis (*v. Review*, 1905, iii., p. 722).

J. D. ROLLESTON.

**REPORT OF A CASE OF MOLLUSCUM FIBROSUM, ADDISON'S
(432) DISEASE, AND PULMONARY TUBERCULOSIS. I. N.
KAHN, *N.Y. Med. Journ.*, Jan. 1910, ii., p. 114.**

THE patient was a man, aged 42, in whom pigment spots and multiple tumours had appeared nine years previously. Since then he had suffered from weakness, loss of appetite, vomiting, and pains in the lumbar region. Considerable exophthalmos was also present.

[As the case did not come to autopsy, the diagnosis of Addison's disease hardly appears justified, especially as it is stated that the mucous membranes were not pigmented. The more probable diagnosis of Recklinghausen's disease, which is occasionally associated with pulmonary tuberculosis, is not mentioned. —J. D. R.]

J. D. ROLLESTON.

**A RARE CASE OF GENERALISED GANGRENOUS HERPES
(433) ZOSTER. (Ein seltener Fall von Herpes zoster gangraenosos
generalisatus.) F. STEVER, *Wien. med. Woch.*, 1911, lxi.,
p. 1167.**

A WOMAN, aged 76, of vigorous constitution, who had had lobar pneumonia two months previously, developed herpes zoster in the region of the left V¹, the eruption being preceded by typical neuralgic pains. Vesicles then appeared in the region of V², so that there was hardly any normal skin visible between the left eye and mouth. The buccal mucosa was also involved. The eruption soon became hæmorrhagic and subsequently gangrenous. Lesions finally appeared on the trunk, buttocks, and perineum. Death took place within a fortnight of the onset, being preceded by high temperature and severe pain, and was due to cardiac paralysis, caused by the herpetic toxins and not to intercurrent sepsis or pneumonia. No blood examination nor necropsy.

J. D. ROLLESTON.

**ON PALPEBRAL NEURO-FIBROMA. (Du neuro-fibroma des
(434) paupières.) RABINOVICI, *Thèses de Nancy*, 1910-11, No. 11.**

EVERY variety of neuro-fibromatosis may be found in the lids, viz., neuro-fibromata, plexiform neuromata, molluscum fibrosum, elephantiasis fibromatodes, and elephantiasis neuromatodes. The first three forms may be distinguished clinically; the last two are indistinguishable from one another. Surgical intervention is the only effectual treatment. Recurrence often occurs, and requires the same treatment as the original lesion.

The thesis contains the histories of nineteen cases, including the following original case:—A man, aged 18, presented a diffuse swelling of the right upper and lower lids, which had first appeared at the age of two years. The diagnosis of plexiform neuroma was made, but after its partial removal no trace of nerve fibres could be found. At a subsequent operation for recurrence, at the age of forty-one, the same diagnosis was made, but owing to an absence of any nerve fibres the diagnosis of elephantiasis fibromatodes was substituted. The second operation was attended by profuse hæmorrhage, and death took place from septic bronchopneumonia.

J. D. ROLLESTON.

**A CASE OF NEURO-FIBROMATOSIS. (Ein Fall von Neuro-
(435) fibromatose.)** P. A. PREOBRASCHENSKY, *Deut. Zeitschr. f. Nervenheilk.*, 1911, xlii., p. 95.

A MAN, aged 34, sought advice for a tumour of the back of the left thigh which he had first noticed one year previously. Of late it had grown rapidly and caused him pain when he moved. There was no family history. Numerous subcutaneous tumours which had first appeared at the age of eight years were present on the trunk and limbs, and pigment patches were seen on the thorax and abdomen. Biopsy of the tumours showed them to be fibromata without nerve fibres. The thigh tumour was removed, together with portions of the sciatic nerve and hamstring muscles to which it was attached, and was found to be a myxo-sarcoma. Death took place some weeks later from septic pneumonia. At the necropsy the brain and cord were found to be normal, but all the peripheral nerves showed evidence of neuro-fibromatosis.

J. D. ROLLESTON.

**A SUMMARY OF FURTHER EXPERIMENTAL RESEARCHES
(436) ON THE ETIOLOGY OF ENDEMIC GOITRE.** (Second Series.) R. M'CARRISON, *Proc. Roy. Soc.*, Feb. 28, 1911, p. 335.

THIS paper gives a short account of some experiments which the author considers afford evidence that goitre is due to a living organism present in the water of goitrous localities. Of twenty-three individuals (average age twenty-two) who consumed the suspended matter of goitre-producing water for from thirty to fifty-five days, nine developed a thyroid hypertrophy. Other twenty-three individuals, who consumed the boiled suspended matter of goitre-producing water for the same time, showed no sign of thyroid enlargement, and seven persons who consumed filtered goitre-producing water showed no tendency to increase in size of the thyroid gland. The author's view is that the agent responsible

for the production of goitre is a living organism parasitic in the human intestine. It is destroyed by boiling, and may be removed by filtration. He states that goitre may be cured by intestinal antiseptics, and lactic ferments may cure incipient goitres. It was not found possible to communicate goitre to dogs by feeding them upon watery extracts from the faeces of goitrous individuals.

A. NINIAN BRUCE.

GRAVES'S DISEASE IN A BOY, COMMENCING AT THE AGE (437) OF TEN. WYNTER, *Proc. Roy. Soc. of Med. (Clin. Section)*, Vol. iv., No. 8, June 1911, p. 155.

A SHORT account of a mild case ; the thyroid gland was enlarged, both isthmus and lobes ; there was obvious proptosis, fine tremor of the fingers and yellowish pigmentation of the skin of the hands and neck. The pulse ranged from 92 to 124. Pituitrin on two occasions accelerated the heart, and had to be discontinued. Thyroidectin in 5-gr. doses twice a day was given, but the result is not stated.

A. NINIAN BRUCE.

THE SEQUELÆ OF EPIDEMIC CEREBRO-SPINAL MENINGITIS. (438) (*Les séquelles de la méningite cérébro-spinale épidémique.*) SIMONIN, *Paris méd.*, 1911, i., p. 595.

THE remote sequelæ of epidemic cerebro-spinal meningitis may be cerebral, mental, spinal, or neuritic. The chronic lesions produced may remain latent for a long period, and then be brought to light by a slight trauma or infection. An explanation is thus given of a certain number of cases of epilepsy, general paralysis, and other psychical disorders.

Simonin records four illustrative cases in soldiers, in whom the diagnosis of meningococcic meningitis had been confirmed bacteriologically and serum treatment adopted. The first two cases were examples of the spinal type, the lesions being practically confined in the first case to certain groups of cells in the anterior cornua, while in the second the affection of these cells was slight, and the lateral columns and grey matter were chiefly involved. In both the lesions predominated in the dorso-lumbar enlargement and gave rise to symptoms of right hemiplegia.

The third case was one of bilateral deafness of labyrinthine origin associated with psychical troubles.

The fourth case was characterised by the occurrence of severe pain, along with sciatic and anterior crural nerves, probably due to radicular meningitis. For some weeks also the patient had some impairment of memory and attention, as well as marked anaphrodisia.

J. D. ROLLESTON.

**TWO CASES OF HUNTINGTON'S CHOREA WITH SPINAL
(439) FLUID FINDINGS.** LORENZ, *Journ. Amer. Med. Assoc.*, No.
13, 1911, p. 941.

BOTH cases were males, and both showed typical hereditary transmission—in the one case through the female members of the family and in the other through the male members. Mental involvement and well-marked chorea were present. The author gives full clinical notes. The cerebro-spinal fluids in both cases gave negative findings, this tending to disprove the view held by some that the condition is inflammatory in nature.

F. ESMOND REYNOLDS.

**CONCERNING PIGMENTERYTHROCYTOSIS OF THE CEREBRO-
(440) SPINAL FLUID.** (Ueber Pigmenterythrozytose der Cerebro-
spinalflüssigkeit.) HEILIG, *Monatsschr. f. Psychiat. u. Neurol.*,
H. 2, 1911, S. 95.

THE author records seven cases of very different nature, but all of which showed blood cells or blood pigment in the cerebro-spinal fluid. In this connection he discusses the cases and compares the findings with those of other authors. The conclusions drawn are:—

1. Pigmenterythrocytosis of the cerebro-spinal fluid is found exceptionally in chronic inflammatory conditions of the membranes, and in neoplasms, diffuse or circumscribed, which proceed from the membranes.
2. In the zone of reaction in the neighbourhood of the diseased focus the vessels enlarge, and escape of blood takes place into the cerebro-spinal fluid.
3. The tuberculous granulation tissue present in vertebral caries is a frequent cause of the condition.
4. If through a new formation the free communication of the cerebro-spinal fluid in the canal is intermissive, as a result of the stagnation brought about, the fluid acquires specially xanthochromic properties; increased fibrin contents, occurring probably only below the site of the disease, cause increased coagulability.
5. In syphilitic and para-syphilitic affections of the central nervous system a combination of lymphocytosis with pigmenterythrocytosis points especially towards marked meningeal involvement; the former finding indicates the extent of the disease as affecting the nervous element, the latter the extent of the meningeal affection.
6. In cases in which the nervous matter itself is involved, or in which metastases in its substance have occurred, and

also in new formations arising from the meninges, there may perhaps occur only lymphocytosis.

7. The three types of pigmenterythrocytosis with their intermediate forms, taken in relationship with the other diagnostic means, are a direct indication of the age, condition, and intensity of those diseases under discussion.

F. ESMOND REYNOLDS.

THE WASSERMANN REACTION: A MORE RELIABLE TECH-

(441) **NIQUE.** WALTER GILMOUR, *Journ. Ment. Sc.*, Jan. 1911, p. 28.

As antigen the author uses a lecithin-cholesterin solution, claiming that this brings about greater fixation of complement in syphilitic cases than when lecithin alone, or when a crude alcoholic extract, is used. His technique is the same as that employed by M'Kenzie. Of 65 cases clinically diagnosed as general paralysis, 96 per cent. gave a positive reaction. Of 35 mental cases of different types chosen at random, and in whom no history of syphilis was obtainable, 16 per cent. gave positive findings.

F. ESMOND REYNOLDS.

ON THE IMPORTANCE OF LUMBAR PUNCTURE AND OF

(442) **SEROLOGICAL DIAGNOSIS IN DIFFERENTIAL DIAGNOSIS.** (Zur differentialdiagnostischen Bedeutung der Lumbalpunktion und der Serodiagnostik.) KLEINEBERGER, *Arch. f. Psychiat.*, Bd. 48, H. 1, 1911, S. 264.

A FURTHER contribution to one published some time ago from the same clinic (Breslau). The author gives his technique for lumbar puncture and summarises many of the opinions as to the general conclusions to be drawn from the pressure, colour, sedimentation, albumen contents, and cytological findings of cerebro-spinal fluid. He gives a short note of a case where a girdle of hyperalgesia over the distribution of the twelfth dorsal root developed after puncture and persisted for three days.

As a result of the cases dealt with, the author concludes that an increase in lymphocyte contents is specific neither for meningitis nor for luetic or meta-luetic infections. In brain tumours the number of the cells has no relationship to the site of the neoplasm nor to the extent of the lesion. An absence of an increase in the number of lymphocytes in doubtful cases points to the condition not being metasymphilitic in nature.

In epilepsy (seven cases) an increase in lymphocytes was never found.

The author considers that the combined cytological and chemical findings form a very important diagnostic aid.

Regarding the Wassermann reaction, he found that the cerebro-spinal fluid of tabetics gave positive results less often than that of paralytics, but that the results obtained by examining the blood serum were the same. In lues cerebro-spinalis, the reaction is less frequently given, and is therefore of less help than it is in metasyphilitic affections.

After a course of treatment with the soda salt of nucleic acid the chemical findings were unchanged, the Wassermann reaction remained positive, and the cells and albumen contents were increased.

After treating a series of cases of paralysis and of tabes with mercury and potassium iodide, in one case the positive Wassermann reaction disappeared, but in the blood serum was unaltered; the cell contents were never distinctly lessened—indeed, in some of the cases of paralysis the lymphocytes were found to be increased in number.

F. ESMOND REYNOLDS.

**AN IMPROVED APPARATUS FOR ESTIMATING THE PRES-
(443) SURE IN THE CEREBRO-SPINAL SYSTEM.** CROHN,
Journ. Amer. Med. Assoc., No. 13, 1911, p. 962.

THE apparatus is a modification of Quinke's, and for it the author claims that there is no accidental escape of cerebro-spinal fluid; that it is compact and small; that the whole can be thoroughly sterilised; that no mercury or other foreign substance is used to indicate the pressure, this being done by the cerebro-spinal fluid itself.

F. ESMOND REYNOLDS.

**VISCOSITY OF NORMAL AND PATHOLOGICAL CEREBRO-
(444) SPINAL FLUID.** (*Viscosité du liquide céphalo-rachidien
normal et pathologique.*) LÉVY-VALENSI, *Gaz. des Hôp.*, No.
40, 1911, p. 603.

THE viscosity was estimated in thirty-two cases comprising various nervous affections. The differences in the results obtained were too small and too inconstant to be of any aid in diagnosis. The viscosity has no dependence upon the lymphocyte, the globulin, or the serin contents of the fluid.

F. ESMOND REYNOLDS.

JUVENILE TABES. HARRIS, *Proc. Roy. Soc. of Med.* (Neurol.
(445) Section), Vol. iv., No. 8, June 1911, p. 50.

A SHORT account is here given of a girl, aged 22, who suddenly developed diplopia, followed three months later by left-sided

ptosis. She has also had pain in the small of the back for three months, and shooting pains down the thighs. The pupils are unequal, do not react to light but react to accommodation. No motor weakness was present, but slight Rombergism and some fine tremor of the hands was found: the knee jerks were normal, but a large part of the body was analgesic. There was no evidence of other syphilitic lesions. A. NINIAN BRUCE.

ON THE DIVISION OF THE POSTERIOR SPINAL NERVE.
(446) **ROOTS.** E. W. HAY GROVES, *Lancet*, July 8, 1911, p. 79.

THE author reports six cases operated on, with one death. He finds the operation an uncertain proceeding for the relief of pain. For the visceral crises of tabes it holds out the only prospect of radical cure which we know of, but only those cases are suitable in which all other means have failed. His fatal case was one of this class, and post-mortem there was found definite chromatolysis of some of the motor cells in the anterior horns of the segments involved, which he considers due to the operation (twenty-five days before death), and probably associated with the lessening of motor spasm. The operation has its largest field of usefulness in cases of spasm associated with lesions of the pyramidal tract. With regard to the actual operation, by the use of preliminary adrenalin injections the procedure becomes almost bloodless and speedy. There is no particular shock associated with the division of posterior nerve roots, and he considers it far better to perform the whole operation in one stage. In dealing with brachial roots, it is best done by hemi-laminectomy, and the lumbo-sacral roots are better approached at their junction with the cord rather than at their point of exit from the dura. J. H. HARVEY PIRIE.

REACTION OF THE POSTERIOR NERVE ROOTS OF SPINAL
(447) **CORD.** Professor FÖRSTER, *Lancet*, July 8, 1911, p. 76.

IN this paper, which Professor Förster read, by invitation, before the surgical section of the Royal Society of Medicine, he reviews the results of the operation which he was the first to suggest for the relief of visceral crises and spastic contractions. Some twenty-five cases have now been operated on for gastric crises in tabes; of these three died from the operation, two were not benefited, the crises persisting; thirteen appear to have been completely cured; in seven the crises ceased for a while, but subsequently recurred, although in a much less severe form, being infrequent, of short duration, and moderate intensity. It is important in these cases to determine exactly the situation

of the pain, the extent of the hyperæsthesia of the skin, and the site of its maximum intensity, as these data may show which roots are chiefly irritated and concerned in causing the crises. Usually only the 7th to 9th dorsal roots are divided, possibly any one from the 5th to the 12th may be involved. The more that have to be divided the more grave is the operation. Gulche's method of cutting the roots extra-durally where they are still in separate sheaths is well suited for extensive resections. It must be borne in mind that gastric crises may arise from vagal irritation, and cases without pain should be regarded as suspicious, and as unsuitable for this operation.

In connection with the cutting of posterior nerve roots in spastic paralysis due to disease of the cortico-spinal path, it must be remembered that only cases with real reflex spasticity as the result of the loss of the cortico-inhibitory fibres are suitable, and also that there must be a reasonable prospect of innervating fibres of the pyramidal tract still existing, all cases with slight spasm and considerable paralysis being unsuitable. Temporary removal of the spasm by the use of stovaine will enable one to decide whether there is any voluntary motility in cases with severe spasm marking the motility. The disease must also have become practically stationary. Some sixty-one cases have now been operated on, with five deaths. Thirty-eight were cases of Little's disease; almost all were benefited, some of them very markedly so.

The after-treatment is important, as good results can only be obtained with long, careful exercise treatment, the limbs being kept for a while in splints, correcting the previous deformities, which are only removed for the exercises at first; later on the splints should still be worn at night. If organic contractures are present, tenotomies, etc., may also have to be done.

J. H. HARVEY PIRIE.

**"FÖRSTER'S OPERATION" OF POSTERIOR ROOT SECTION FOR
(448) THE TREATMENT OF SPASTICITY, WITH AN ILLUSTRATIVE CASE. OTTO MAY, *Lancet*, June 3, 1911, p. 1489.**

In this paper the author first of all reviews the physiological and pathological considerations underlying the rationale of the operation. The two chief indications for its performance in cases of spastic paralysis are: (1) the presence of such severe contracture as to make standing and walking impossible, and (2) the occurrence of painful cramps in the affected limbs. Next, the technique of the operation is considered, and the after-treatment and results. The after-treatment is of great importance. It consists in the correction of deformity by appropriate mechanical means, in the performance of plastic operations to overcome organic contractures

if necessary, and in exercises, first passive, then active. The early history of a case operated on to relieve the spasticity of cerebral diplegia is given.

J. H. HARVEY PIRIE.

**FÖRSTERSCHE OPERATION BEI TABISCHEN GASTRISCHEN
(449) KRISEN.** BECKER, *Med. Klinik*, Nr. 20, 1911, S. 775.

THE patient, a female, æt. 54, presented the usual symptoms of tabes dorsalis. In addition there were marked gastric crises, associated with vomiting. The symptoms were of such severity that Förster's operation of intradural resection of the seventh to tenth posterior dorsal nerve roots was performed.

Immediate relief of the gastric symptoms followed the operation. The loss of gastric sensation was so marked that the patient lost all sense of repletion at meal times. This overloading of the stomach produced painless vomiting, which, however, never recurred after the food was regulated.

An unlooked-for complication was a temporary paraplegia, following the operation, due possibly to the pressure of effused blood on the cord.

JAMES M. GRAHAM.

**CASE OF GASTRIC CRISES IN ? TABES. DIVISION OF POS-
(450) TERIOR ROOTS.** HINDS HOWELL, *Proc. Roy. Soc. of Med.*
(Neurol. Section), Vol iv., No. 8, June 1911, p. 48.

AN account of the case of a man, aged 39, who suffered from severe attacks of abdominal pain, followed by vomiting; latterly the attacks occurred every week, and could only be relieved by morphia. Wassermann reaction positive. He had syphilis fourteen years ago, for which he was treated for two years. All deep reflexes present. Right eye definite Argyll-Robertson pupil, left reacts slowly to light. Perchloride of mercury (fifteen injections of $\frac{1}{10}$ gr. each) intramuscularly caused a return of the light reflex in the right eye, though not very active. As the pain was always referred to the umbilicus, and the gastric symptoms seemed to occur secondarily to the abdominal pain, the posterior roots of D 8, 9 and 10 were divided within the spinal canal. The condition improved for six weeks, when the pain returned, being referred again to the region of the umbilicus, although the area was now anæsthetic. "606" intravenously produced no change.

A. NINIAN BRUCE.

**THROMBOSIS OF THE CERVICAL ANTERIOR MEDIAN SPINAL
(451) ARTERY; SYPHILITIC ACUTE ANTERIOR POLIOMYELITIS.** WILLIAM G. SPILLER, *Univ. of Penn. Contrib. from Dept. of Neurol.*, Vol. v.

THE history of this case is as follows:—the man had an attack of what was supposed to be spinal meningitis, but recovered. Four years later he was suddenly seized with pain between the shoulders and felt weak and numb in the arms; in a quarter of an hour this feeling spread to the lower limbs. About a month later he had recovered largely the use of the lower limbs, but with some spasticity. He had incontinence of the bladder and rectum. He was almost completely paralysed in the upper limbs, which were much wasted. The case was reported at this time as one of probable cervical hæmatomyelia. At death, some two years later, the lesion was found to be thrombosis. The anterior spinal artery and the branches coming from it in the last cervical and first dorsal segments were found to be much thickened, and some of them occluded. The appearances indicated syphilis as the cause. The softening was intense in these two segments, and the anterior horns showed softening as high as the fourth cervical segment. The case is valuable as showing that thrombosis may occur in a very limited distribution of spinal vessels.

J. H. HARVEY PIRIE.

THE EPIDEMIOLOGY OF POLIOMYELITIS. BATTEN, *Proc. Roy. (452) Soc. of Med. (Epidemiol. Section)*, Vol. iv., No. 8, June 1911, p. 198.

THIS paper consists of a collection in a concise form of the facts which are known in relation to poliomyelitis (polio-encephalomyelitis) as an infective and epidemic disease. A complete list of epidemics is appended to the paper, while a more detailed account of twenty-six epidemics since 1907 is given. The author concludes that one is justified in regarding poliomyelitis as an infective disease occurring in epidemic form during July, August, and September, and is probably communicated from person to person, or may be carried by a person who presents no sign of the disease. The advantages of notification are pointed out, as it would lead to the general recognition that the disease is infective, and would tend to prevent its dissemination by contact, especially as its infectivity is not great.

A. NINIAN BRUCE.

SERUM THERAPY IN ACUTE POLIOMYELITIS. (Sérothérapie (453) *de la poliomyélite antérieure aiguë*.) A. NETTER, A. GENDRON, et TOURAINE, *Compt. rend. de la Soc. de Biol.*, 1911, pp. 707 and 739.

THE authors record four cases of acute poliomyelitis treated by lumbar injections of serum obtained from patients recovered from the disease. In all the cases treatment was only commenced after the paralysis had appeared. One case died, the other three improved, two of them very markedly; and although quite aware of the *post hoc, propter hoc* fallacy, the writers believe that such serum treatment will prevent the extension of the disease if undertaken soon enough and persevered with long enough.

J. H. HARVEY PIRIE.

PROGRESSIVE SPINAL MUSCULAR ATROPHY OF INFANTS (454) AND YOUNG CHILDREN. F. E. BATTEN, *Brain*, March 1911, p. 433.

THIS paper deals with the widespread progressive muscular atrophy of infants and young children due to a spinal lesion. It is based on the clinical and pathological examination of eight cases. These, on pathological grounds, are divided into three classes:—

(1) A type in which progressive muscular weakness occurs during the first week or month of life, gradually progresses, and terminates in death after a variable period of weeks, months, or years. It may be a familial affection. The pathological change found is a degeneration of the lower motor neurones, the character of the change depending on the time after the onset of the disease at which death takes place. The type corresponds to the case described by Werding and Hoffmann.

(2) A type of case in which progressive muscular weakness and atrophy begins somewhat later in life, after the child has already walked, and slowly progresses till death occurs from respiratory failure or pneumonia. The pathological changes resemble those found in a toxic neuritis.

(3) A type of case in which progressive muscular weakness and atrophy begins in later life, after the child has already walked, slowly progresses, and is attended by a widespread myelitis of the spinal cord.

Six cases recorded are assigned to the first group, and one each to the second and third. The literature is then recorded, and a critique given of the recorded cases. The great difficulty in the diagnosis of these cases is from primary myopathy.

J. H. HARVEY PIRIE.

THE PROGRESSIVE SPINAL MUSCULAR ATROPHIES OF
(455) **INFANTS (WERDING-HOFFMANN).** F. E. BATTEN, *Lancet*,
June 3, 1911, p. 1481.

THE clinical record of a case of progressive paralysis beginning in a child below the age of twelve months, affecting, in the first place, the trunk and proximal muscles, gradually spreading to those more distantly situated, affecting the intercostals, but sparing the diaphragm. The intelligence, sensation, and the visceral functions remain unaffected.
J. H. HARVEY PIRIE.

CASE OF SPONDYLOSE RHIZOMELIQUE (BATTEN). CASE OF
(456) **SPONDYLOSE RHIZOMELIQUE (BUZZARD). SPONDYLITIS,**
WITH PROGRESSIVE MUSCULAR CONTRACTURE
(HARRIS), *Proc. Roy. Soc. of Med.* (Neurol. Section), Vol. iv.,
No. 8, June 1911, pp. 40-45.

THE first case is that of a man, aged 25. The illness began three years ago with pains in the feet. Later the thighs began to waste, and have got steadily thinner. Then he had pain in the back. Six months ago he could only walk with the help of two sticks owing to the pain and stiffness of the legs, and had difficulty in lying down in bed owing to the rigidity of the back. He was found to have no movement of the spine below the neck, but could flex and rotate the head fairly well. The scapulæ were free, but the hips were fixed. The deep reflexes were active, and there was no affection of sensation.

The second case was that of a man, aged 34, who complained of pains round the lower part of the thorax and upper part of the abdomen of eighteen months' duration, usually worst at night. On examination, complete immobility of the spinal column below the upper dorsal level, with diminution of the normal lumbar curve. X-rays showed no bony deformities, and the condition was limited to the spine.

The third case was that of a soldier, aged 33, who left the army three years ago owing to pains in the shoulders and back. His neck and shoulders gradually became stiff, and, though the pain has now disappeared, the thorax is quite fixed, and there is no movement of the ribs or chest in respiration. The scapulæ are fixed to the chest wall by muscular contracture, but were movable under chloroform. Hip joints not affected.

According to Marie, cases of this disease occur nearly always in men, usually up to the age of thirty-five or forty years. He regards the existing ankylosing symptoms to be the consequence of some infection, gonorrhœal, tubercular, etc. The spine

and proximal joints were first affected, later the knee and other joints.

A. NINIAN BRUCE.

ZUR SYMPTOMATOLOGIE DER HYPOPHYSENTUMOREN.

(457) SCHNITZLER, *D. Ztschr. f. Nervenheilk.*, Bd. 41, H. 4-6, 1911, S. 279.

SCHNITZLER records two cases of hypophyseal tumour.

1. A girl of 17 developed choked discs, followed by double optic atrophy, together with headache and vomiting. The right visual field was narrowed, both on the nasal and on the temporal side, and the visual acuity in both eyes was much diminished, especially in the right. Apart from the optic nerve symptoms, the central nervous system showed no abnormality—sensory, motor, and reflex functions being normal. The genital organs were normally developed. The urine was normal. A radiogram showed enlargement of the sella turcica, the posterior clinoid processes being unrecognisable. Rhinological examination showed a downward displacement of the posterior wall of the sphenoidal sinus. Operation was undertaken. No details are given of the technique. The patient died within two days. At the autopsy there was found a carcinomatous growth of the infundibulum, the size of a mandarine orange. The pituitary body itself, apparently normal in size, was attached to the antero-inferior surface of the growth. The tumour had invaded the floor of the third ventricle.

2. A man of 30, without syphilitic history, developed bi-temporal hemianopia, which rapidly developed into total blindness of the left eye, with temporal hemianopia of the right. The fundi were practically normal. A radiogram showed an ill-defined expansion of the sella turcica. No affection of the sphenoidal sinus was found on rhinological examination. Later, incipient optic atrophy was detected in the left eye. The skin of the cheeks underwent a trophic change, somewhat resembling scleroderma, and there was a waxy appearance in the skin covering the costal angle and the distal portions of the forearm and legs. Apart from the optic phenomena, no abnormal signs were present in the central nervous system. There was no acromegaly. There was no abnormality of the sexual organs. The urine was free from sugar or albumin. Operation was undertaken. No details are given of the operation. The patient died within a few hours. At the autopsy there was found a tumour the size of a walnut, extending from the optic chiasma to the upper border of the pons. The growth was a fibro-endothelioma of the dura, covering the diaphragm of the sella turcica, and apparently arising from the region of the diaphragm. The hypophysis was flattened out beneath the growth.

PURVES STEWART.

A CASE OF CEREBRAL DECOMPRESSION OF FIVE YEARS' (458) STANDING, IN WHICH CEREBRAL HERNIA HAS RESULTED, WITH MARKED IMPROVEMENT IN OPTIC NEURITIS. LLOYD and SPELLISSY, *Journ. of Nerv. and Ment. Dis.*, May 1911, p. 267.

THE contents of this article are sufficiently indicated in the title.
ERNEST JONES.

CASE OF SLOWLY PROGRESSIVE RIGHT HEMIPLEGIA SUG- (459) GESTING TUMOUR (OPERATION—NO TUMOUR FOUND). BATTEN, *Proc. Roy. Soc. of Med. (Neurol. Section)*, Vol. iv., No. 8, June 1911, p. 48.

THIS case is that of a woman, aged 52, who had an attack of diplopia twelve years ago, from which she rapidly recovered. Five years ago the right leg began to give way. Three years ago the right hand became weak. Headache, of many years' duration, had become worse lately. No fits, no aphasia, no weakness of the face, no optic neuritis, no sensory loss. The Wassermann reaction was negative. The weakness, however, had steadily increased, right plantar reflex extensor, left flexor: ankle clonus on right side and right knee jerk exaggerated. On trephining, nothing abnormal was noted, and there was no increase of intracranial pressure. Patient made a good recovery, but the paralysis was not affected in any way by the operation.

A second somewhat similar case is described by Dr Stanley Barnes, where nothing was found at the operation; but later the patient presented a fairly typical picture of disseminated sclerosis.
A. NINIAN BRUCE.

CASE OF PSEUDO-BULBAR PARALYSIS OF DOUBTFUL ORIGIN, (460) PROBABLY DISSEMINATED SCLEROSIS. GRAINGER STEWART, *Proc. Roy. Soc. of Med. (Neurol. Section)*, Vol. iv., No. 8, June 1911, p. 46.

PATIENT, female, aged 24, married, four children, all healthy. Three years ago gradually became weak in right arm and leg, in three weeks being unable to walk or raise her right hand. Completely recovered in seven months under treatment. Six months ago she again gradually became weak in both legs and in three weeks could not walk. Both arms also became slightly weak. After seven weeks' treatment she recovered. The next attack began with a peculiar feeling in her head, followed two hours later

by a fit, during which she became unconscious. Since then she had been very weak in all limbs, and unable to speak except in an indistinct whisper. Wassermann reaction negative. Left plantar reflex extensor, right usually doubtful. In three months this condition again passed off, the speech and articulation becoming normal. The treatment consisted of gradually increasing doses of arsenic.

A. NINIAN BRUCE.

CEREBRAL SCLEROSIS AND IDIOCY. CANTLEY, *Proc. Roy. Soc. (461) of Med. (Sect. for Child. Dis.)*, Vol. iv., No. 8, June 1911, p. 184.

CHILD, aged 2 years and 4 months, was, according to the mother, normal up till nine months of age, when she developed fits of opisthotonus and screaming. She had, however, never been able to sit up, walk, or talk. She is small, wasted, and constantly in a position of head retraction and opisthotonus. Kernig's sign present. She is apparently blind, but the pupils are equal, react to light, and the fundus is normal. No history of syphilis. The diagnosis lies between a sclerosis of post-natal origin, perhaps secondary to encephalitis, and a cerebral spastic diplegia.

A. NINIAN BRUCE.

ZUR LOKALISATION DER MOTORISCHEN UND SENSORISCHEN APHASIE UND DER IDEOKINETISCHEN APRAXIE. Prof. B. PFEIFER, *Monatsschrift für Psychologie u. Neurologie*, Bd. 18, 1911.

THE author made the diagnosis of cysticercosis of the brain by puncture of the left temporal lobe in a case with general symptoms of brain pressure and local symptoms of cortical sensory aphasia, motor apraxia on the right, and slight dyspraxia on the left hand.

After the removal of the cysticerci on the temporal lobe the patient improved only for a short time. Several months later a cortical motor aphasia followed. There was then a total aphasia for six months, when the patient died from pneumonia.

A series of frontal sections of the brain showed three collections of the cysticerci. The one injured a good deal of the orbital part, the whole triangular part, and the frontal division of the opercular part of the third left frontal convolution; the other, the middle and hind part of the first and second left temporal convolution, the island of Reil, the postcentral operculum and the gyrus-supramarginalis; the third was localised in the top of the left temporal lobe. The precentral operculum was wholly intact. The latter

can therefore not be the chief place for the localisation of the cortical motor aphasia.

The case does not coincide with Marie's views on the localisation of aphasia, since the posterior part of the third frontal convolution is strongly injured, whereas the whole zone of the lenticular nuclei, except the island of Reil, was intact.

The motor (ideokinetische) apraxia on the right hand arises probably from the lesion of the left supramarginal gyrus, the slight (sympathische) dyspraxia of the left hand probably from the pressure of the enlarged left ventricle against the corpus callosum, which was very thin.

The case proves, therefore, the view of Liepmann on the localisation of apraxia, and does not coincide with the opinion of Hartmann, since the posterior part of the second frontal convolution was intact.

AUTHOR'S ABSTRACT.

ÜBER ISOLIERTE AGRAPHIE. FORSTER, D. *Arch. f. klin. Med.*, (463) Bd. 102, H. 1-2, 1911, S. 82.

A REPORT of a case of cerebral tumour (without autopsy), showing marked agraphia without aphasia, but with slight apraxia in both hands. The author criticises the views of Wernicke and Storch, and gives adherence to Liepmann's theory of the existence of an eupraxic centre. As the result of an exhaustive examination of his case, he considers it to be one of a lesion involving a tract connecting the left word-memory centre with the left eupraxic centre.

H. RIDLEY PRENTICE.

ERFAHRUNGEN MIT SALVARSAN, SPEZIELL BEI LUES DES
(464) **ZENTRALNERVENSYSTEMS.** NEUHAUS, *Münch. med. Wochenschrift*, No. 18, 1911, S. 955.

A REPORT of seven cases of cerebro-spinal syphilis, five cases of tabes, two cases of hemiplegia, and one poliomyelitis subacuta (? luetica), treated with salvarsan. The drug was given by intramuscular injection in all cases except three, in which the method was intravenous. There were no ill effects beyond a raised temperature for some days, and some pain at the site of injection. Improvement, in so far as it was referable to salvarsan, was slight. The author considers that there are immediate and remote good results of the administration. As examples of the former, he observed return of a sluggish reaction to light in one eye of a tabetic, and a rapid return of speech in one hemiplegic. He considers treatment with salvarsan to be justified even in advanced cases, and advocates repetition of the injection in four weeks.

The dosage used was from .4 grm. to .6 grm. The Wassermann reaction remained positive in most instances; in four cases it became negative, while in one it changed from negative to positive.

H. RIDLEY PRENTICE.

**THE STATUS OF SALVARSAN IN PELLAGRA, BASED ON
(465) THE REPORTS OF TWENTY-ONE COLLECTED CASES.**

COLE and WINTHROP, *Journ. Amer. Med. Ass.*, Vol. lvi., No. 24,
June 17, 1911, p. 1794.

THE authors find that salvarsan offers no better results than other methods of treatment in pellagra, and that the well-known tendency to myocardial and renal degenerations in this disease contraindicates its use in many cases.

A. NINIAN BRUCE.

**THE CONTINUOUS ADMINISTRATION OF SULPHONAL, ITS
(466) DANGERS AND THE PRECAUTIONS TO BE ADOPTED.**

GEORGE M. ROBERTSON, *Journ. of Ment. Sci.*, April 1911.

The administration of sulphonal has passed through three periods characterised by appreciation, disillusionment, and distrust. It has now been partially rehabilitated by the majority of asylum physicians, who do not regard it as dangerous, provided that the following precautions, which experience of fatal accidents in the past has taught to be very necessary, are adopted:—(1) It is comparatively insoluble, and if administered as a powder or in the tabloid form it may accumulate in the intestines and then cause acute poisoning. It should always be given dissolved, and as less than two grains are soluble at the internal temperature of the body (100° F.), a dose of 20 grains requires at least half a pint of hot fluid (milk, soup, toddy) for its safe administration. The bowels must also be regularly moved, and it should not be given to persons suffering from constipation. (2) It is excreted very slowly by the kidneys, it therefore may accumulate in the blood and cause acute poisoning. It is also a renal irritant, and nephritis has been experimentally produced by its employment. The amount of urine passed should be noted, and it should be examined periodically for albumen and casts, for some cases of apparent acute poisoning have been cases of uræmic coma. It should not be employed at all when albumen is present in the urine. (3) Hæmatoporphyrinurea is believed to occur from prolonged use and accumulation in the blood, in most cases. To allow of excretion there should be a break in the administration

every three to six days for an interval of three days. Not more than 40 grains daily should be given to a man or 30 to a woman. The urine should also be examined daily for any trace of a red colour. (4) To discover dangerous idiosyncrasy, which has been alleged to exist, the first dose should be small. To reduce the subsequent dose, it may be combined with bromide of potassium but not with trional, as the latter has the same dangers associated with its action. (5) Exhaustion, anæmia, constipation, and disease of the kidneys, liver, and heart are contra-indications to its use.

Its occasional use in single doses only does not appear to be accompanied by danger, and many have taken it in full doses for long periods without injury.

AUTHOR'S ABSTRACT.

**AN ATTACK OF SIMPLE MIGRAINE COMPLICATED WITH
(467) PARALYSIS OF THE SPHINCTER IRIDIS AND THE
CILIARY MUSCLE.** BOUCHAUD, *Journ. de Neurol.*, fév. 5,
1911, p. 41.

THE patient was a woman of healthy appearance, 37 years of age. For seven years she had had attacks of migraine, the pain being centred in the right eyeball and brow. These attacks occurred regularly every week, with nausea and vomiting, but since ceasing to drink wine they had been less frequent and less intense. A week after the last attack the vision of the right eye became deficient.

On examination the right pupil was found to be enlarged and fixed, while the left was of normal size and reacted normally. Right vision for near objects was indistinct. No other paralyses were discovered.

The author points out that this case of migraine, complicated by ophthalmoplegia interna, differs from ordinary ophthalmoplegic migraine, which begins in early life and in which the extrinsic muscles of the left eye, supplied by the third nerve, are affected by periodic paralysis or permanent paralysis with exacerbations.

In this case the author attributes the paralysis to spasms of arterioles supplying the third nucleus, followed by narrowing of the vessels to a greater or lesser extent, and thus producing malnutrition of some of the nerve cells. The probability of anything more than partial recovery is therefore remote. Electricity and potassium iodide are suggested as remedies.

H. M. TRAQUAIR.

**CASE OF UNILATERAL PARALYSIS OF NINTH, TENTH, AND
(468) ELEVENTH CRANIAL NERVES.** SAUNDERS, *Proc. Roy. Soc.
of Med.* (Neurol Section), Vol. iv., No. 8, June 1911, p. 51.

A VERY brief account of a case of a woman, aged 42, who suffered from weakness of the right arm, with difficulty in swallowing and in speaking of nine months' duration, but much more marked during the last three months. On examination there was found paralysis of the right palate, abductor paralysis of the right vocal cord, wasting of the right sterno-mastoid and upper part of the trapezius, and slight wasting with fibrillary tremor of the right side of the tongue. Speech was nasal and hoarse. Otherwise the examination was negative.

A. NINIAN BRUCE.

**CASE OF CONGENITAL BRAIN DEFECT, WITH A CURIOUS
(469) STAMPING GAIT AND TENDENCY TO FALL BACK-
WARDS, SUGGESTIVE OF A FUNCTIONAL ASTASIA.**
BATTEN, *Proc. Roy. Soc. of Med.* (Neurol. Section), Vol. iv.,
No. 8, July 1911, p. 33.

THIS case is that of a child, aged five and a half, born at full time, but backward in learning to talk and walk. He is quite unable to stand alone or walk. If stood up he tends to fall backward, and if urged forward makes ataxic movements with his legs, and is quite unable to make any attempt to balance. He can sit up well, his arm movements are good, and he has very little incoordination of the legs when lying in bed. The lesion was considered to be in the cerebellum, probably the middle lobe.

A. NINIAN BRUCE.

PSYCHIATRY.

TEMPERAMENTS: IS THERE A NEUROTIC ONE? ROBERT
(470) JONES, *Lancet*, July 1, p. 1.

THE author, considering temperament as the reaction tendencies of an individual to his environment, answers his query in the affirmative. After considering various types of persons, such as the active or responsive, the sensitive, the apathetic, he comes to the unstable or nervous. This type, as is shown from a number of genealogies, may be associated with distinguished mental superiority, is characterised by great sensitiveness to pleasure and pain, by motor restlessness and high emotional tone, and it is by the preserving of such temperament, which we are entitled to call neurotic, that we can promote happiness and harmony where otherwise there would be strife and discord.

J. H. HARVEY PIRIE.

INVESTIGATION OF THE MENTAL DEFICIENCY, EPILEPSY, (471) BLINDNESS, AND DEAF-MUTISM IN DENMARK BY WASSERMANN'S REACTION. (Eine Untersuchung der Schwachsinnigen, Epileptiker, Blinden und Taubstummen Dänemarks mit Wassermann's Reaktion.) O. THOMSEN, H. BOAS, B. HJORTH, and W. LESCHLY, *Berl. klin. Woch.*, 1911, xlviii., p. 891.

THE investigation was made in the State Serum Institute at Copenhagen, with the following results:—Of 2061 cases of mental deficiency, only 31, or 1·5 per cent., gave a positive reaction. Five of these had acquired syphilis, in at least four of whom the infection had been so recent that it could not have been the cause of the mental deficiency. In only 26 (1·2 per cent.) did the serum test justify the supposition that the mental condition was due to inherited syphilis. Of these, however, 13 had clinical evidence of the disease, so that in only 13 out of 2061 cases did Wassermann's reaction reveal a hitherto unrecognised infection. The authors conclude that the investigation of mental deficiency in Denmark by Wassermann's reaction does not justify the belief that syphilis plays any important part in the ætiology of the condition.

Of 259 epileptics, aged from 5-70 years, only 1 patient, or 0·39 per cent., gave a positive reaction. Of 146 blind, aged from 5-20 years, none were positive. Of 344 deaf-mutes, aged from 5-40 years, only 3 were positive, in one of whom there was clinical evidence of inherited syphilis.

The investigation, therefore, showed that inherited syphilis does not play a greater part in the ætiology of epilepsy, blindness, and deaf-mutism than has hitherto been supposed.

J. D. ROLLESTON.

BOOKS AND PAMPHLETS RECEIVED.

Dugas and Moutier. "La Dépersonnalisation." Paris: Félix Alcan, 1911. 2 fr. 50.

Erdheim. "Morphologische Studien über die Beziehungen der Epithelkörperchen zum Kalkstoffwechsel."

I. "Über den Kalkgehalt des wachsenden Knochens und des Callus nach der Epithelkörperchenextirpation."

III. "Zur Kenntnis der parathyreoopriven Dentin-Veränderung."

V. "Über die Dentinverkalkung im Nagezahn bei der Epithelkörperchentransplantation."

(*Frankfurter Ztschr. f. Path.*, Bd. 7, H. 2, pp. 175, 238, and 295.)

- Ingenieros. "La Criminología," 1911.
 Ingenieros. "Instituto de Criminología," 1911.
 Ingenieros. "La Evolución de la Antropología Criminal," 1911.
 Ingenieros. "Clasificación de los Delincuentes según su Psicopatología," 1911.
 Ingenieros. "Sistema Penitenciario," 1911.
 Ingenieros. "La Defensa Social," 1911.
 Ingenieros. "Locura, Simulación y Criminalidad," 1910.
 Ingenieros. "El Envenenador Castruccio" (Estudio psicopatológica), 1910.
 Ingenieros. "Las Bases del Derecho Penal," 1910.
 Ingenieros. "El Delito y la Pena ante la Filosofía Biológica," 1910.
 Löwy. "Ätiologische und therapeutische Erfahrungen über Vitiligo (Dyshumorale Genese und Organotherapie der Flecken)" (*Prag. Med. Wchnschr.*, xxxvi., Nr. 3, Ste. 31, 1911).
 Löwy. "Eine Spiralprüfungsmethode mit dem Pencil zur Abgrenzung berührungsanästhetischer und berührungshypästhetischer Hautstellen" (*Wien. klin. Wchnschr.*, 1910, Nr. 27).
 Löwy. "Subakute Raucherparanoia und einige andere Fälle von diffusem Beachtungswahn aus dem Gefühle subjektiver unbestimmter Unruhe oder unbestimmter Angst (drohenden Unheils), unbestimmter Erwartung und aus dem Gefühle allgemein erhöhter Wichtigkeit der Eindrücke" (*Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. v., H. 4, 1911, S. 605).
 Mott, Schuster, and Sherrington. "Motor Localisation in the Brain of the Gibbon, correlated with a Histological Examination" (*Proc. Roy. Soc.*, July 3, 1911, p. 67).
 Nageotte. "Trois Notes sur le Syncytium de Schwann dans les Fibres Nerveuses Périphériques" (*Compt. Rend. d. l. Soc. de Biol.*, T. lxx., May 27, 1911, pp. 861, 917, and 967).
 Obersteiner. "Der Geisteskranke, und das Gesetz in Österreich Vergangenheit, Gegenwart, Zukunft" (*Jurist.-psychiat. Grenzfragen.*, Bd. vii., H. 5, 1911, S. 23).
 Orth. "Die Epithelkörperchen bei Tetanie und bei einigen anderen Erkrankungen" (*Virch. Archiv*, Bd. 203, 1911, S. 282).
 Römer. "Die epidemische Kinderlähmung" (Heine-Medinsche Krankheit). Berlin: Julius Springer, 1911. M. 10.
 Salgó. "Willensentschliessung und Rechtspraxis" (*Jurist.-psychiat. Grenzfragen*, Bd. vii., H. 5, 1911, S. 3).
 Sommer. "Klinik für psychische und nervöse Krankheiten," Bd. vi., H. 2, 1911.

Review of Neurology and Psychiatry

Original Articles

THE FORM AND CONTENT OF THE PSYCHOSIS; THE RÔLE OF PSYCHOANALYSIS IN PSYCHIATRY.¹

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IN the *American Journal of Insanity*, October 1910, Jones, of Toronto, reported the interesting case of a woman of 39. At the age of twenty-six she had an attack of depression; at the age of thirty-eight she developed several delusions of persecutory and of erotic nature, and became somewhat excited. She made a complete recovery after five months. Eighteen months later, after a gynecological operation, a depression developed, followed by excitement, associated with erotic delusions. The excitement disappeared after two weeks, and the patient was soon able to leave the hospital. During the second attack of excitement the patient was talkative, alert, passed from idea to idea by superficial associations, rhymed and played on words; her excited behaviour consisted of very free and varied activity; no mannerisms, catalepsy, nor stereotypies were noticed. The author endeavoured to trace the origin of the morbid ideas of the

¹ This communication contains the substance of two papers on the above subject read before the New York Psychiatric Society on March 2, 1910, and May 3, 1911. The first paper was published in the *N. Y. State Hosp. Bull.*, May 1910.

patient and to enter into her inner life. He succeeded in showing that many of the peculiar actions and utterances of the patient were far from being meaningless; they were the expression of deep-seated and disturbing factors in her life.

The case, therefore, might be described as that of a woman of thirty-nine, who had one attack of depression and two attacks of excitement. On the other hand, it might be described as an attack of mental disorder, in which the morbid symptoms showed an intimate relation to very important trends in the patient's inner life.

In the first description the form of the psychosis receives the more attention; in the second, attention is chiefly paid to the content of the psychosis, and to the stuff in the individual's life from which that content is derived.

The case illustrates well the two different points of view from which one may study mental disorders, and the point of view makes an enormous difference in the nature of the case histories, upon which psychiatric views are, or should be, based. To some, the first description of the case analysed by Jones might seem quite adequate; their conception of the psychosis would be determined by formal considerations of the nature of the thought disorder and of the psychomotor excitement. The ideas expressed by the patient would be considered as more or less irrelevant; the fact that certain actions might have a definite meaning to the patient would be considered as trivial, and owing to its triviality would not be specially investigated. So long as the activity did not present certain formal characteristics, *e.g.* "no mannerisms, catalepsy, nor stereotypies," its nature would be of little interest.

The author has shown how incomplete the history of such a case is, if the examination stop at the formal differentiations, and do not proceed to the analysis of the meaning of the patient's reactions in the context of the patient's inner life. Although this case had sufficiently anomalous features to indicate the advisability of continuing the examination along the lines followed by the author, many would stop short before such an examination.

For our present purpose, two main tendencies in psychiatry may be opposed to each other, and are represented by two different schools of thought, which may be, for shortness, called

the school of formal differentiation and the school of subjective analysis. The school of formal differentiation is numerically much superior to the other.

There are certain advantages in this method of studying mental disorders, which concerns itself with the more objective analysis of the disorders of mood, of the stream of thought, and of the volitional discharge, and of the disturbance of the healthy harmony between mood, ideation, and general reaction.

1. We are thus able to form provisional groups, and to make an orderly arrangement of our cases.

2. The groups which are thus formally differentiated may be large and somewhat heterogeneous, but this very fact means that we are able to dispose of a very large proportion of our observed cases; few remain unclassified, and this always gives a comfortable feeling.

3. The formal differentiation may be of considerable prognostic importance; it is true that the limits of this point of view are beginning to be more clearly recognised.

4. This method of studying our patients is more or less objective, and therefore less liable to errors in interpretation.

5. The examination of patients by this method takes less time; the physician takes what is offered, does not require to ascertain what is kept back; he is thus able to respect the delicate prejudices of the patient and of himself, and is not compelled to go behind them in order to ascertain the living forces at work. These living forces are often disagreeable and strange. That, however, is merely because life and the conventional picture of life are not identical.

The advantages of the method of this school are obvious; no one can safely dispense with it. The method, however, is inadequate; it gives us only a partial picture of the disorder; it must be supplemented by the method of subjective analysis. The importance of this line of investigation is becoming more widely recognised; its application, however, is in its infancy, and raises many problems for which as yet there is quite insufficient material to furnish an answer. The principle of the method is a simple one; it amounts to this: One cannot claim to have thoroughly examined a patient with a mental disorder until one has a complete knowledge, not only of his conscious trends, but also of the subtle underlying forces which are apt

to influence mood, and thought, and activity without the individual being clearly conscious of the process.

The necessity of such an intimate examination of the patient's inner life appears to be clearly indicated in certain disorders where mental dissociation plays an important rôle. In such cases the method of examination itself is claimed to be the most efficient part of the treatment. This claim, it is needless to say, is repudiated by others. The value of this form of examination was later recognised in a second very wide group of mental disorders characterised by a deterioration of healthy interests, a distortion of the mental life, bizarre thoughts and apparently meaningless reactions, and a series of special symptoms which it is unnecessary to specify in detail. The great defect of the school of formal differentiation is well shown in its attitude towards this group of disorders; having made an excellent objective analysis of the various symptoms, it has proceeded forthwith to construct a hypothesis as to the nature of the disorder, with the help of a few scattered physiological data. The great mistake here is, obviously, the *assumption* that a subjective analysis (in the sense used above) is irrelevant. That it is not irrelevant has been sufficiently demonstrated in recent literature; whoever cares to take the time and trouble to enter into the inner life of a patient of this group will probably convince himself that the facts he thus obtains are far from irrelevant to the development of the psychosis. If there had been time I should have liked to discuss, not those cases where the development has been made clear by an analysis, but other cases where it has been impossible to trace the development of the psychosis. I should have liked to take up the question as to why in certain cases, who co-operate well, one finds oneself in face of a large amount of heterogeneous material in the patient's life from which, however, no reconstruction of the psychosis is possible. It is probably as important a task to define clearly the conditions which determine the negative result of an analysis as it is to record the positive result. To return to the main topic, we have referred to two large groups, in the first of which a subjective analysis may be said to have established a claim as to its validity, and in the second of which its importance is becoming more and more clear. There is a third group, in which hardly a beginning has been made in the direction of testing its applic-

ability. The case of Jones is a welcome contribution from this point of view, and it is to this group that, in a later part of this paper, I should like to call attention. In the meantime I take up the case of a patient in the first group where the validity of the method is more or less established, in order to invite discussion on certain points.

M. G., a Swiss lady of 59, in May 1909 underwent a vaginal hysterectomy for fibroid tumour of the uterus; five years previously, in May, her sister had died. During convalescence the patient was visited by her niece, who reproached the patient for having somewhat neglected her sister during her fatal illness. On leaving the hospital the patient was nervous and had screaming spells; during the summer she continued to have these spells and was treated in a sanatorium; the thought, "you killed your sister," became an obsession; she frequently called out "Tilly," "Billy."

She came under observation in October 1909. She talked freely of her disorder, into the morbid character of which she had good insight; she was annoyed by the obsession "You killed—you killed her—you killed a lot of people"; the thought continually recurred, it was worse in the morning than in the evening; it was rather of the nature of a thought than of a voice. The patient talked impatiently of this imperative thought and would even turn around in response to it and say "You can go to the deuce"; she talked almost contemptuously of her sister; she said that she had no reason to reproach herself with the treatment of her. Although slightly uneasy, the patient laughed at amusing incidents. She was self-assertive, querulous and complained of her treatment by her relatives, by the Church and by God. Apart from her obsession, and a habit of shouting out occasionally "Tilly," "Billy," to relieve herself, the patient showed no special symptoms

The idea that she had killed her sister was repudiated by the patient as not belonging to her actual conscious trend of thought; the question naturally arose whether it was the expression of repressed trends in the patient's inner life. The patient gave the following outline of her life:—

She was the daughter of a butcher in Switzerland, had had an uneventful childhood. At nineteen she became companion to a lady in Geneva; she was later for four years companion to a rector's

wife in England (she spoke with much unction of the rector, his wife and his carriage and their general refinement). She came to America at the age of twenty-eight and for the last thirty years lived in Church circles. When asked as to any disturbing factors in her life, the patient stated that she had none. When asked about any love affairs, her life had been free from such disturbing elements. At nineteen a man had once offered to enter her room in a hotel in Geneva. At fifty a lawyer had proposed that she should become his mistress, but "he was a perfect gentleman." After having definitely denied any sexual experiences the patient admitted that she had been having gynecological treatment for the last thirty years, and had also been troubled by a genital itching which made her nervous and uneasy. She had occasionally relieved herself of this irritation by causing sexual gratification. For the first three years in America she was treated at the Women's Clinic, but left it, as she was "tired of being bundled about by women." The gynecological diagnosis had been retroversion and some pelvic inflammation. The patient later admitted that she procured herself sexual gratification even before the age of thirty; this habit dated back to the onset of menstruation. She maintained persistently that she never felt any compunction with regard to this habit; the gynecological treatment had no doubt been a grateful aid in enabling her to dispose of this awkward habit. Her extremely religious life probably showed an endeavour to compensate for this habit, and the patient often referred to herself as a pure woman and a lady; the two attributes seemed to her of equal value. She frequently referred with obvious delight to the refined circles in which she had moved. The latent conflict in her life was therefore clear: beneath the surface was self-abuse; above the surface was the life of the devout Sunday School teacher. The patient had more or less suppressed from her conscious life the intolerable admission of the fact that she was indulging in a degrading habit for which she might well have reproached herself. Was this factor to be brought into any connection with the obsessive thought that she had killed her sister? The patient's relations with her sister had been somewhat strained. She came to America from the refined rector's house to find her sister with her family living in a crowded East-side apartment; this was a great shock to the patient. She was unable to live with her

sister. Her sister and the latter's husband enjoyed simple and somewhat vulgar pleasures, which, to the patient's refined ideas, were extremely distasteful. When her sister's son walked out of a window in delirium tremens, the sister had talked disparagingly to the patient about God, and the patient had then threatened not to visit her again ; in fact this led to an estrangement just prior to the sister's death.

These facts tended to show that for the patient her sister represented everything that was opposed to the refined. To be religious and refined was the patient's ideal, but two disturbing factors in actual life were her personal degrading habit and her unrefined sister. In the psychosis, which we can perhaps regard as a breaking down of compensation, with the establishment of a new compromise, the suppressed trends invaded her conscious life ; they were not allowed, however, to break through in a form which would have been intolerable to her personality. The patient managed to retain her religious pride and self-sufficiency, and to look upon her mental disorder as something exogenous for which she was not responsible, but for which she could blame her relatives, her friends, and God. The self-reproach implied in the obsession may have been partly derived from a vague element of repressed desire for the death of her sister (there being a latent longing in the direction of the vulgar brother-in-law), but came mainly from the actual disorder in her sexual life. To estimate the exact influence of each disturbing factor, to ingeniously explain the entire mechanism, is not aimed at here. The important point is, that the content of the psychosis had a very direct relation to the most important conflicts in the patient's inner life, and was not a mere casual and wholly inexplicable phenomenon.

Perhaps too much time has been devoted to giving the above example of a form of disorder, the steps in the development of which are now being more generally recognised. The case is offered rather as a basis of discussion of method.

The following was the method used in the analysis and treatment of the case :—The self-reproach implicit in the obsession was explicitly repudiated by the patient as not belonging to her conscious life. Its source had therefore to be found. Self-reproach which the individual dare not admit to himself or herself is very probably derived from the sexual sphere. The

gynecological treatment for thirty years appeared strange. Details were soon given by the patient, and the habit of self-abuse was confessed, but in very veiled terms. The origin of the self-reproach was thus in part discovered; the place played by her sister had next to be investigated. On analysis this appeared to be more or less clear. As to the treatment, this consisted in a repeated effort to make the patient put the emphasis on the real disturbing factors in her life. During the first ten minutes of an interview she would harp on her troubles and talk continuously. When the physician tried to give her advice she was eager to reject it. An endeavour was made to make the patient conscious of the inconsistency of her attitude. She was brought to realise that at the same time she was complaining of a serious trouble and not asking for any advice in order to get rid of it, that, on the contrary, she was eager to push away advice. She was told that such behaviour showed that to follow the road towards recovery was more distasteful to her than to hug a respectable obsession. She was encouraged to look more honestly at her past life, to realise the flaws and failures in it, and to understand that her refinement and her religious life were rather empty and in contrast with actual facts; in addition, she was encouraged to face courageously and with confidence the actual demands of the situation, and to make her life efficient at a somewhat higher level.

During the seven months that the patient was under treatment a very marked improvement in her condition took place, and her general attitude quite changed. She has during the past year been able to live outside of hospital, and for two months was an efficient matron in a small home.

In the above case a systematic investigation of the patient's life disclosed a number of upsetting factors of considerable significance. The analysis would probably have yielded little if the physician had not had the conviction that in such a case some adequate cause for the disturbing emotion must exist in her inner life. The analysis was made against very persistent resistance. It is not easy to tell a Sunday School teacher of advanced years whose life, according to her, has been entirely spiritual and whose symptoms do not directly relate to the sexual topic, that she is deceiving herself and that her sexual life has not been along the lines of good mental hygiene. To

make satisfactory progress in an analysis one must persistently refuse to accept evasive statements and repeated denials. To refuse to accept such a worthy lady's statements means a very strong conviction in one's own mind. When one has to enter upon the analysis of a case with such a strong conviction, in order to obtain positive results, it is obvious that there is considerable danger of suggesting connections to the patient and of misinterpreting the relation of occurrences in the light of the conviction.

Where the patient voluntarily comes to the physician to get relief from distressing symptoms, or where the symptoms themselves point undoubtedly, even to the sceptical mind, in the direction of the upsetting factor, a thorough investigation of the inner life of the patient meets with less initial difficulty. The patient, however, may be brought under the physician's care against the will of the patient. The symptoms may seem to have no direct relation to what is suspected to be the disturbing, underlying factor. In that case, is the mode of procedure to be the same as in the case of the patient referred to above? Even in the case of this patient, was such an analysis advisable from the point of view of treatment, or could similar results have been attained by a more general method and by a less specific procedure? The general is what the patients clamour for; the specific is what they resist. One of the determining conditions of the psychosis in this patient seemed to be definite qualities of her character, at least of her character as seen in later life, for the raw material of her character could not be determined. The patient was rather vain, prided herself upon the refinement of her acquaintances, was satisfied with a somewhat formal and superficial religious life, was rather irritable, impatient with trivial discomforts, rather self-assertive. The question would then arise whether the endeavour should not be made merely to correct these qualities of her character by a general method without going into the details of what was assumed to be the upsetting process?

There is no doubt, I suppose, that such patients may get well, and perhaps as quickly, by the general method, especially if applied by a physician with good intuition. A comparative material of cases treated in the one way and in the other can probably at present not be had. *A priori*, however, it would seem

that, unless the specific disturbing causes be carefully analyzed, the equilibrium of the patient will always be rather doubtful. Besides, no general reinforcement of character of any value would seem to be possible, until the patient has faced fully and explicitly the actual meaning of the symptoms, and probably this specific line of analysis is the most helpful method for strengthening the weak points in the patient's disposition. It is possible, of course, that to render explicit all the subtle meanings of the individual's thought and activity might revive, or augment, conflicts in the patient's life which had attained at least a working adjustment, with the result that the upset caused by the analysis would be more than the patient was able to dispose of. Such a practical point would have to be left in each case to the judgment of the physician, who would have to estimate the various factors with which he had to deal.

In the case of this patient, used for the sake of illustrating the course pursued of a specific analysis against persistent resistance, the procedure seems to have been of distinct benefit to the patient, both in ameliorating the specific symptoms and in making her fully conscious of those traits in her general character, owing to which the material supplied by the upsetting factors was used in the development of symptoms.

I do not propose to give an example of a successful analysis of a case belonging to the second group above referred to, a group where the validity of such an analysis is beginning to be recognised. On the contrary, I wish to give a brief report of a case belonging to another group, into whose inner life I was quite unable to penetrate during her residence in the hospital, while a great deal of light was thrown on the case by the information which the patient spontaneously gave during a visit to the hospital several months after her discharge.

The patient, a Hebrew milliner of 22, was described by her relatives as a bright, lively and sympathetic girl, who did not seem to brood over trifles and who gave her sister the impression of being quite frank and open. For five months previous to admission she had been dull and inactive; at times she would embrace her mother energetically and even hurt her. She occasionally was afraid, thought that somebody had entered the house, when nobody had come in.

On admission to the hospital the patient made the impression

of being somewhat affected and dramatic. She apostrophised herself and said, "Bella, you, once the modest girl, have to lie here and think; they tell me, Bella, it's all imagination, you just imagined it." She said that her trouble was, "I think that everybody is after me—they want to take me." This feeling came in the daytime as well as at night. "One night I dreamt there was someone choking me—I have often gone to my mother and said that I felt there was somebody near me, killing me, doing me a wrong—I would say how was it when I woke up that I couldn't move?"

In her general mental activity and behaviour the patient showed no marked peculiarity. She later made a few further statements as to her symptoms previous to admission: "I used to imagine funny things, that people were throwing things at me—I imagined they always wanted to get me into trouble." At times she would be frightened.

The patient gave a fair outline of her life, but gave no description of any internal difficulties, did not enter into her inner life, denied that there had been any upsetting factors. With regard to sexual experiences she only made partial admissions and hesitated a good deal; as soon as the topic was referred to, even in a distant manner, the patient evidently became slightly uneasy and on her guard. Menstruation had ceased previous to admission, and was absent in hospital. She worried over this and twice dreamed of blood. On the second occasion it was obviously menstruation that she dreamed of.

The patient was a quiet, self-contained girl, who showed no peculiarity in her general behaviour. She was polite and on quite good terms with the physician. She never, however, in hospital talked spontaneously of her inner life, of her ambitions and her difficulties, and even when encouraged to do so she remained silent. When asked any question which was relevant to the psychosis she usually sat quite silent with somewhat pouting expression. She co-operated poorly in an association test, required repeated explanations; it had finally to be discontinued. The physician put before her his view that the fear and uncertainty at home, which she herself could not explain, doubtless had a source in her inner life, that perhaps some incident had roused up trends, which somewhat startled her, and which she would not allow to come into clear conscious-

ness. It was explained to her that it would be better for her to realise clearly the actual nature of the upsetting factors, so that she might not in future be at the mercy of influences which she only dimly understood. It would be better for her to get better actively, rather than simply to wait until everything spontaneously simmered down. The patient apparently took no interest in clearing up her own difficulties; twice, however, she spontaneously said: "If I want to talk to you at any time can I come into the office?"

The problem raised by this second patient was somewhat more difficult than that raised by the first. First of all, practically no progress was made with the analysis, and therefore our idea of the mechanism of the disorder remained to be confirmed. The line of investigation and the line of treatment in this case might well furnish a topic for discussion. Many, no doubt, will advocate a purely general method, that of encouragement and of passivity. Others will insist upon the crucial importance of a further analysis of the case. How far should treatment wait upon the positive results of an analysis? How far are we entitled to assume that we know in general outline the mechanism of the disorder, and to use this assumption authoritatively in order to encourage the patient to co-operate in an analysis? Unless one treat the patient by a specific analysis one leaves the patient on recovery in the same exposed condition as before the onset of the disorder. On the other hand, if one place before the patient one's conception of the disorder and if the analysis still yield nothing, may not the physician have still further confused the material of the patient's ruminations? In the case of this patient the development of a vague fear of being wronged, with other symptoms, was suggestive of a disturbing sexual factor. The patient admitted and again denied certain familiarities; her dreams were of blood. Her attitude whenever the question of her sexual life was referred to was that of being on her guard.

The further course of the case was of great interest. The patient gradually became somewhat brighter, left the hospital four months after admission, and at that time was still somewhat inactive, slow, and not very communicative.

Three months after discharge she sent me one or two letters, which seemed to indicate that she was rather exhilarated. She

promised to come up to the hospital to tell the physician the cause of all her troubles. Shortly afterwards she paid the promised visit. She made herself quite at home in the physician's office. In striking contrast to her previous behaviour, she was bright, mildly elated, and freely talkative. During the interview of two hours she talked continuously but quite coherently, going over the various factors in the development of her psychosis. Previous to the onset of the mental disorder a young man, a cousin whom a family agreement had destined for her husband, being piqued one day, said that if she had not been a relative of his, he would have *wronged* her long ago. This threat, which probably appealed strongly to repressed trends, made a very deep impression on her mind. A few evenings later, when walking with him, she visited a hotel kept by her old nurse. Much against her inclination she took some wine. She shared a bedroom that night with a little girl and spent the night in a state bordering on a panic. She barricaded the door and did not sleep. She returned to her people and was no longer the same. She was unable to work, was depressed. She brooded over the threat and thought that something had been put in the wine. Her mother would irritate her by continually saying that she must be in love with some one. As her mother disbelieved her she was at times very bitter towards her mother. Previous to her admission to the hospital menstruation ceased. She had the idea that perhaps she was pregnant, and retained this idea until the physician gave her an explanation after her admission. From this account given by the patient, the original supposition that the anxiety and fear, which had been prominent at the beginning of the psychosis, represented the expression of the repressed sexual instinct, appeared to receive confirmation. We know empirically that morbid fear and anxious anticipation frequently have such an origin. The whole reaction to the internal difficulties had been, however, comparatively simple in type, the psychosis having been characterised by mild depression and generally reduced activity. The condition of the patient during her visit naturally excited curiosity, for she now showed the opposite type of reaction. She was asked to tell about her life since she left the hospital. She had been quite bright and efficient at home, and after her discharge she and her cousin became more definitely engaged. One day, however, he failed to keep an appointment

with her. He went to Coney Island with some other friends, and when he called on her late at night to explain he was intoxicated. She therefore broke off relations with him. The patient talked quite gaily of this episode and said she did not care for the man. In view of her condition this statement was not accepted, and then the patient became tearful, admitted that she was still very much attached to him, and that she felt keenly the wound to her pride. Beneath the surface, therefore, of this happy, talkative condition, there was a painful emotion relating to an event which was in no way dissociated from the mental life of the individual, but which was not being reacted to frankly.

A still more complicated situation is presented by the following case, whose history is very briefly reported :—

E. M., a woman of 37, wife of a railway clerk, came under observation in January 1910. Her life had been somewhat troubled and she had already had several attacks of mental disorder. She was described by her mother as having been a bright, energetic girl, the light of her home, slightly over-ambitious ; she had worked as a teacher ; for three years before her marriage she had lived apart from her own family owing to disagreement with her mother. She married at the age of thirty, but temporarily lived apart from her husband and continued to teach. During this period she had an abortion, received little care, had an emotional attack, and during the following week she showed mental symptoms, *e.g.* she rented a room, but was unable to find the house again. During the following four years she had several abortions, she occasionally taught in school, she once left her alcoholic husband for four months.

In February 1907 the patient suddenly woke up one night, was much afraid of her husband, was with difficulty kept in the house. She was taken to her mother's house and was kept there for two months ; she showed constant restlessness, tried to escape, appeared to see terrifying objects, was variable in her attitude to her husband. In April she was taken to a sanatorium, and there she was perplexed and somewhat dazed ; she showed motor unrest, was difficult to keep in bed ; her physical health was poor. During her stay in the sanatorium she had an attack of dysentery, with a delirium of low type. After three months the patient was discharged as recovered. In March, 1909, she had a child, which lived only three days.

In the autumn of 1909 the patient became sleepless, tossed about at night, abused her husband and mother; at daybreak she would be herself again. One night she escaped from the house and wandered around for two days; she explained that she had left her house as she felt that her husband did not care for her; she said that she felt confused. She was sent to a State hospital, and there she appeared mildly elated; she said that she had been wandering around seeking a church home; she had had fantastic visions; she would not eat meat as she believed in the transmigration of souls. She was not quite clear as to the date and as to the nature of the hospital. After two weeks she appeared to be quite well and was discharged.

In November she had a similar attack of restlessness about her menstrual period, and during Christmas week another such period which led to her commitment; she was menstruating at the time of admission to the hospital.

On admission the patient showed a striking variability in the promptness of her responses; some questions were answered promptly, others she answered only after a long pause and after the question was repeated. She was able to carry out movements promptly, and after an interview she ran down the hall with arms outstretched saying "let me—let me." She felt that there was something wrong with her head, "just a little nervousness, I don't think so quickly as I ought to." She had no marked feeling of sadness, but said, "I feel melancholy sometimes." The patient denied any hallucinatory experiences, but later said, "I lie awake and I do imagine I see things, pictures and things like that." During the first two months in the hospital the most prominent feature was her constant harping on the subject of discharge, and a blind striving to leave the hospital; she was usually found standing at the ward door; when it was opened she would quietly try to leave: if told to come back she hesitated, but slowly descended the stairs. When brought back she resisted strongly; she smiled when her conduct was discussed. For two weeks she required to be spoon-fed.

To briefly review the above case, as it appeared at this period, two months after admission: The patient had a transitory upset after an abortion at the age of thirty; four years later a second attack of several months' duration and of rather complicated

nature ; in the autumn of 1909 a third attack in which, after a wandering episode, she was mildly elated, appeared to have some thought difficulty and uttered some odd ideas ; during the last two menstrual periods the patient had been upset, and on the second occasion she was brought to the hospital. Her condition was characterised by variable responsiveness, by some thought difficulty and by a slightly depressed mood. There was no marked delusional trend and only a vague reference to seeing " pictures and things like that."

The case might therefore be described as a recurrent psychosis, characterised, at least in the last two attacks, by thought difficulty and an anomaly of mood (in one attack mild elation, in another slight sadness), with no consistent psychomotor retardation nor excitement ; its relation to more typical recurrent psychoses might be discussed, and some might hold that the essence of the disorder lay in the formal relationship.

At that time, *i.e.* two months after admission, during a period of three weeks an endeavour was made to enter into the inner life of the patient and to realise the meaning of her abnormal reactions. The results of this line of investigation were quite fragmentary, a reconstruction of the development of the psychosis was not as yet possible, but enough was obtained to show how inadequate was the merely formal analysis of the case. In view of the incomplete nature of the results at that period, they may be presented as they were obtained. During the earlier interviews the patient gave a quite external account of her life and of the development of the last attack ; in a later interview she talked more freely about the actual circumstances of her life ; she spontaneously said that they could not afford to have children ; her husband had to be " careful " ; she did not have complete sexual satisfaction. About the time of the onset of the psychosis she had a tingling in her left hand. When asked as to any explanation for this she, apparently irrelevantly, said that she might have been weakened by the existence of leucorrhœa since the age of fifteen. When asked as to any further associations which the symptom called up she stated that she had it about the age of fourteen or fifteen, " just for a short time," she then changed the age to seventeen or eighteen, and talked of sexual experiences at this age. These experiences seemed at first to have no special relation to the symptom which was being

investigated ; the patient then proceeded to talk of other experiences at the age of twenty-two ; she finally admitted masturbation as a child ; she practised the habit with the left hand.

The investigation of this one apparently trifling symptom had revealed the fact that the sexual instinct had played an important rôle in the patient's life ; and more specifically the sensations in the left hand, which occurred at a period when her sexual instinct was not fully gratified, and when her attitude towards her husband was one of discontent if not antagonism, evidently represented a strong tendency towards an early type of sexual gratification. (The lady doctor reported that she found evidence of masturbation.)

The patient had not been taking her food spontaneously ; the nurse had to feed her with a spoon. When asked to give a reason the patient gave superficial answers ; she would eat at home ; she did not care to eat in the hospital ; she would rather starve than eat in the hospital. Then after a pause she said that everything she ate seemed to mean something ; she would give no specific example. When asked if she had a dislike for any special food she said she would like apples ; when asked if apples had any special association she talked of a visit to Creation at Coney Island, and told of Eve handing Adam the apple ; apple meant temptation. She felt that to eat food in the wards was cannibalistic ; it seemed as if the meat were human flesh ; the meat might be derived from hands or fingers. She made a remark about there being a Black-hand floor and a mason floor in the building, and, when later asked about this, she said : "I used to think that when men joined a society they abused each other." She meant this in a sexual sense. When asked how she had such thoughts she admitted that a woman had talked to her about abnormal sexual practices ; this topic had been much in her mind lately ; it had had nothing to do with her refusal of food.

The patient stated that vegetables meant divorce ; a friend of hers, a vegetarian, had been seeking a divorce, had told the patient about her marital troubles and had urged the patient to get a divorce. So for the second time in the analysis the persistent investigation of an apparently indifferent symptom disclosed the fact that it represented a force of profound importance in the patient's inner life. The exact weight to be

laid upon each of the upsetting factors in the patient's life is a further question, the goal of the analysis. The point to be emphasized at present is, the importance of investigating the inner meaning and association of symptoms, of understanding their content as well as their form.

Taken on its face value each symptom has little importance ; seen as symbols and investigated in their inner meaning these symptoms throw a flood of light on the play of disturbing forces in the patient's life ; and only when the psychosis is seen as the resultant of such forces is it fully understood.

Even the fragment of the analysis of this case, which has been already presented, shows how inadequate the mere formal presentation of the symptoms would be, and, if such a patient can be helped at all, it can surely be done more efficiently when the physician has clear insight into the forces which are at play. The further development of this case was of great interest.

After the patient had been three months in the hospital auditory hallucinations became very prominent in the clinical picture, and the content of the hallucinations was of great assistance in enabling one to determine the nature of the repressed trends which were of importance in the inner life of the patient. By autumn the hallucinations had begun to fade away, and ten months after admission the patient was discharged in a state of apparently good equilibrium, and in better general health than she had ever been before.

Even when the patient was almost convalescent she felt hesitation about eating the usual squares of bread ; she said that she thought they meant "a mason's square" ; "downstairs they seem to have some idea as to whether I should eat bread and be true to the mason's square ; I never was in such a foolish place in my life." In this connection she recalled a postcard with the motto, "A mason is on the square" ; the picture represented a man and a woman sitting on a square. When she herself was initiated into a little social circle she had sat on a musical chair ; the others had said there would be nails on the chair. The initiation rites of the masons were for her of sexual nature and much more serious than sitting on a musical chair. The mason sitting on the square was for her evidently closely associated with important undercurrents. The square of bread derived its im-

portance from its involved associations with deeply disturbing factors in the psycho-sexual life of the patient. She had refused custard ; when asked about this she said, " Murdering him (her husband), depriving him of his life, that's why I hesitated to take it." " The nurses taught me a lot here, that yellow meant yellow head (her husband has very light hair)—my husband—drinking down—it was whispered to me, but I didn't allow it to annoy me." She said that she used to think that custard was drinking down her husband, " not exactly drinking him down, not being true to him." She felt that she would be " drinking him away from me." At night she heard voices saying that her husband was downstairs, suffering certain gross sexual indignities of the nature of perversions. This hallucination evidently corresponded with her previous idea about their being a mason's floor in the building. Another idea that there was also a suffragette floor was probably the converse of this. The patient said that many years ago, when her sister was taking out nature studies, she and her sister had given up eating eggs on seeing " the disgusting side of it " ; she thought that the white consisted of the " serum " of the male. Thus the custard, like the square of bread, was the condensed symbol for a widely ramified complex of disturbing forces. " I either had to be true to the *yellow* or true to the *white* " ; this was one expression of the complex of her relations to her father, an extremely important element in her psycho-sexual life. This was confirmed by statements of the patient after recovery.

The patient's early relations to her brother forced themselves into consciousness in the guise of auditory hallucinations ; she heard at night that he was in the hospital suffering the same experiences as her husband. The mechanism of wish-fulfilment was prominent in the formation of her morbid ideas ; she wrote letters saying that she had just heard that her husband was dead, and that her sister (of whom she was jealous) was ill. She also heard that her husband was President ; she heard a certain physician's name mentioned in connection with her ; they said that he was madly in love with her.

The above is chosen from the wealth of material furnished by this case, as examples to show how it was possible to trace the peculiar utterances and reactions of the patient to somewhat complicated disturbing forces in her life. The analysis revealed

the importance of the rôle which her father and brother had played in her inner life, the importance of certain sexual trends which had been almost completely repressed from her conscious life, the actual existence of disharmonies which she had not the courage nor the training to recognise. Psycho-analytic treatment, however, should consist in more than the ingenious interpretation of psychological hieroglyphics; this is after all only the preliminary work in the task of the re-education of the patient. A clear appreciation of her mental constitution, and of the educational forces which had helped to mould that constitution, was necessary in order to understand the psychosis. The conflicts and repressing forces in her early life required to be investigated. Her father, a Protestant, was easy-going, talked freely about sexual topics, advised his boys "to have a woman"; she was his favourite child; he was always very demonstrative; she would be used by her sister and mother as the intermediary to get special favours (in the psychosis she has "to be true to the white"). Her mother, a Catholic, was extremely strict, did not allow her daughters to associate with any boys, gave them no information on sexual matters, objected strenuously to her daughter later taking up nature studies. The patient's prudish repression of the sexual factor was illustrated by her attitude towards the onset of menstruation; a girl had explained this to her at sixteen; the girl's mere mention of menstruation made her blush; she thought she would rather die than have her menstruation, it seemed dreadful. The patient illustrated her modesty by saying that she was chosen to act the part of Priscilla; her professors were always struck by her innocence; her fellow-teachers had to inform her of the actual conditions of life; the example, which she gave of this, was that they told her that sometimes brother and sister living together behave immorally.

Beneath this crust of prudery were a strong sexual instinct, experiences of self-abuse, and probably experiences of other nature. With this endowment the patient at thirty had entered into marriage after a six weeks' acquaintance; she gave as the reason a desire to avoid any scenes due to the jealousy of her brother (in the psychosis the brother and the husband frequently alternate); her husband was a Protestant, not acceptable to her family, alcoholic; on several occasions she left him. Her husband was poor (in the psychosis he becomes President); she was

very ambitious, prided herself on her richer friends. The circumstances evidently were such as to prove a continual strain on her mental adjustment, and in her attacks the disturbing undercurrents came to the surface in a distorted form. During the course of the treatment the patient was encouraged to talk frankly about her hallucinatory experiences, her morbid ideas, her reminiscences. At no time was she frank as to her inner life before eighteen. An endeavour was made to bring the patient to realise that the mental disorder was the expression of important factors in her nature, and that the analysis aimed at bringing clearness into the confused mixture of childhood-ideas and dream-ideas presented by her psychosis.

It may be questioned whether an analysis has any influence upon the course of such a psychosis as that of the case just referred to. From the point of view of guarding the individual against further attacks, it can hardly be questioned that a thorough analysis is a necessary preliminary to that re-education of the individual, which is the best guarantee of future mental health. From the point of view of treatment, the emphasis should be laid rather on the re-education than on the analysis itself.

The importance of a thorough analysis, however, is not to be judged merely by the interest of the individual case, nor by the extent to which treatment seems to be of benefit. The bearing of the case on important problems of education is obvious, and it is one of the present tasks of the alienist to procure accurate data, which may be laid before those who are responsible for directing the lines of educational and general sociological progress.

It is now time to turn to a large group of the so-called functional psychoses, where the thorough analysis of the patient's inner life and repressed trends is practically never undertaken. Here one may find the patient elated, talkative, over-active, or, on the other hand, sad and slow in thought and action. The clinical picture is well-defined; the formal characteristics enable one, as a rule, to give a definite prognosis, but frequently neither in the activity nor in the utterances of the patient do special trends stand out to indicate that they have an important rôle in the life of the patient. Nor does the mood during a period of over-activity favour quiet introspection and reminiscence

undisturbed by present surroundings; when the attack is over and normal balance restored, the patient may not see any reason for co-operating in an analysis. There are, therefore, many reasons why, in the majority of such cases, we shall always remain shut out from the intimate springs of the patient's life, and shall have to confine ourselves to external features. It would be a great mistake, however, to say because we are, from the above more or less *extrinsic* reasons, unable to make an analysis in such cases, that an analysis is *intrinsically* impossible. In that case we should be thrown back on the constitution as the only explanation of the disorder; we should have to consider certain patients as alarm clocks, liable to go off of themselves at certain periods known only to the maker, the time of striking being occasionally determined by the jolts of life. The alarm-clock conception is extremely disagreeable, it smacks too much of the doctrine of predestination; both may be true; but the question is whether our actual clinical material justifies this view. The fact that formal symptoms have been sufficient to create useful symptomatic-prognostic groups has rather discouraged attempts at deeper analysis, and even where the symptoms are anomalous, there is the tendency rather to discuss the relation of the case to a symptomatic-prognostic group than to try to penetrate into the actual meaning of the individual symptoms in the given case. The result has been that clinical material, as a rule, has been examined only from the one point of view. It is one of the present tasks of psychiatry to take up this same material from a wider point of view. The cases which are more schematically pure, with the characteristic levelling of the values of the patient's ideas, are naturally the least suitable for analysis. Wherever the mood shows any marked peculiarity, wherever a special trend shows itself in speech or action, an attempt must be made to trace it to its source. Even in the most familiar of mental disorders much work remains to be done.

I should like to make a brief reference to one or two cases where the individual attack seemed to represent the reaction, more or less intelligible, to a definite set of circumstances, and therefore was not adequately conceived when considered to be a quite unexplained explosion of a somewhat unstable emotional constitution.

A young woman (A. M.), 17 years of age, became depressed during her first pregnancy. Our account of this attack was obtained during a later admission to the hospital. The first attack had been characterised by depression and general slowness, and lasted until two months after child-birth. The patient at first gave no account of any precipitating factor except the fact that she was pregnant. The analysis of the inner life of the patient revealed the following facts, which showed that the pregnancy had probably much more than its usual emotional value :— The patient had brought into her married life her childish ideas of sexuality ; her childish experiences taught her that child-birth meant turmoil and mystery, and sexual relations had appeared to the child in a rather grim light ; her father was alcoholic ; she would hear violent protests and altercations ; she would be relieved to see that her mother on leaving the bedroom after such a scene showed no sign of pregnancy ; an uncle had behaved improperly to her ; on marriage her mother refused to give her the information which she sought, and told her that she would have to find out all these things for herself ; her husband, who later became insane, used her in the most crude way, so that the sexual relations were of the most brutal elementary character ; she had the idea that a woman had to be cut open in order to have a baby. Two months after marriage one day she suddenly became sick and felt that she was dying ; the doctor was summoned and diagnosed pregnancy, he said that it was “ a child going to have a child ” ; from this time she was depressed ; she was slow in her movements ; she paid little attention to her personal appearance and to her housework. Her condition remained unchanged until two months after child-birth, when the patient made a somewhat abrupt recovery following the visit of a jocular priest. In this case, therefore, the attack of depression was not quite unintelligible, but appeared to be determined by definite disturbing factors in her inner life ; the disturbing factors, however, caused a reaction of a somewhat simple type.

In contrast with this example of a simple depression, I may make a brief reference to two attacks of simple excitement in a young woman of 25. In the second of these attacks the patient was elated and voluble, she jumped from topic to topic, her remarks seemed to be determined by more or less superficial associations ; no ominous symptoms were present. The cause

assigned by her relations for the onset of the attack was disappointment over not receiving an expected rise in salary. During the week previous to her admission she had been somewhat upset, apparently over this matter. During convalescence the patient herself gave this as the cause of the attack. During the psychosis, however, the patient talked freely of marrying a certain young man. She wrote him a letter and signed herself "Your future wife." During her convalescence she denied that she had ever had any special affection for this man. When this statement was not accepted, as her utterances during the attack indicated the contrary, the patient admitted that she had thought of him as a possible husband. One week before admission to the hospital she had heard that he was engaged to another girl. Her pride was considerably wounded. During the following week she worried, but the worry, which rose from the news of the engagement, she displaced onto the salary question. How far such a displacement is purposeful and conscious, and how far it acts below the level of clear conscious activity, is not always easy to determine.

An analysis of the earlier attack of excitement revealed a similar displacement. The attack had come on after the abrupt marriage of her brother. The patient said that this marriage made her worry over the financial outlook, and for some time after the marriage she talked about this. On the circumstances being fully discussed, the emotional value of the brother's marriage was found to be much greater than was warranted by any actual financial difficulties, which, as a matter of fact, were trifling. She had been devoted to her brother. She stated that she had never even thought of her own marriage: "My mind was full of him, it was occupied with him, I was so much attached to him." She had concealed from others, and probably to a large extent she had concealed from herself, what her brother's marriage meant to her.

It is important to notice in this connection that the presence of such an emotional factor does not in itself point to any special type of disorder, but that the mode in which it is reacted to and elaborated is what gives to the various types of disorder their special significance. This remark is made because one so frequently finds that too much weight is laid upon a mere demonstration of the presence of certain complexes, and insuffi-

cient weight laid upon the reaction to and elaboration of these complexes, which elaboration depends upon those balancing factors in the individual's life, the harmony of which means good mental equilibrium. A proper appreciation of this point is necessary for proper treatment of the individual case. It is important to realise that certain disturbing under-currents or complexes of ideas, which have received great attention in the setting of complicated disorders, may also produce symptoms in a much simpler setting. We have to remember, too, that the more or less voluntary repression of painful experiences, with a subsequent emotional disorder, has its counterpart in normal life. The tension of painful feeling may lead to a paradoxical appearance of mirth, and flippant talkativeness of a superficial order may conceal a serious pain. It is not without interest, from the point of view of the rôle which repression plays in our life, to notice that the young woman who, in her adult life, twice reacted to a painful experience with a simple type of elated excitement, had in early life two short attacks of depression, the one precipitated by the death of her father, the other by the drowning of a brother whom she adored.

The above cases tend to show that the principles, which Freud formulated on the basis of his study of the psychoneuroses, are of wide application in general psychiatry. I admit that the cases have more an illustrative than a demonstrative value, and that their interpretation is not simple. The aim of this tentative communication has been to lay stress on the fruitfulness and interest of a certain line of investigation rather than to present any dogmatic formulation of results.

EPIDURAL ASCENDING SPINAL PARALYSIS.

By WILLIAM G. SPILLER, M.D.,
Professor of Neuropathology in the University of Pennsylvania.

(With Plate 29)

ASCENDING spinal paralysis has been recognised many years, but so far as I know no case has been reported in which this paralysis was caused by extensive epidural lesions, nor has any reference been made to such a form of paralysis. It is important to recognise that a lesion external to the dura, and extending from the lumbar to the cervical region, may be the cause of ascending paralysis.

In those cases in which the degeneration of the lateral columns is intense, as in the first case of this paper, the paralysis may be spastic in the lower limbs, even though the lumbar roots be somewhat implicated. In other instances when the degeneration of the lateral columns is slight, as in the second case, the paralysis of the lower limbs may be flaccid from the implication of the lumbar roots.

The clinical diagnosis between intradural and extradural ascending paralysis may be very difficult or even impossible, but as the latter form is of rare occurrence, a mistake is not frequently made. Ankle clonus with loss of patellar reflexes, as in the second case, would imply that the lesion is in the lumbar region and above the reflex arc for the Achilles tendon reflex, but it would not justify a diagnosis of extradural from intradural lesion; it is even questionable whether this phenomenon would be more likely to result from an extradural lesion. Motor palsy without sensory symptoms would be more indicative of an intramedullary than of an epidural lesion.

The first case of this type that has come under my observation was seen in 1902, although its importance in this respect was not recognised at that time. In that year Dr Charles K. Mills and I reported a case of external spinal pachymeningitis, but ascending paralysis was not considered.¹ The history of the case was incomplete. The man was 42 years old. He had

¹ Mills and Spiller, *Brain*, 1902, p. 318.



Photograph of the spinal cord showing the tumour on the posterior aspect of the dura. The small piece represents a portion of the dura removed for preservation in Kaiserling's fluid, in order to retain the colour.

To illustrate Paper by Dr Spiller.

been blind since he was three years of age. Numbness began in the right great toe in June 1895, and gradually spread to the knee, and then attacked the other foot and leg in the same way. He had no pain. Previous to the onset of the numbness he had had swelling and tenderness in the legs and pain in the lumbar region. He could walk until November 1895, but his knees became bent. He began to have nocturnal incontinence of urine in July 1895. The tendon reflexes became exaggerated and spasticity developed in the lower limbs. In an examination made, 12th October 1898, sensation was found to be intact; later it was stated that the man could extend his lower limbs and stand, but could not walk, and that he was very spastic in the lower limbs. Nothing was recorded as regards the condition of the upper limbs beyond the occurrence of gangrene in the right hand.

The external surface of the spinal dura on the ventral aspect was found firmly adherent to the bodies of the vertebræ throughout the spinal canal. Some of the nerve cells of the anterior horns of the lower cervical region appeared atrophied, and here and there a nerve cell was found with displaced nucleus. The columns of Goll in the cervical region were much degenerated. The ventral and dorsal roots of the cervical region appeared to be normal, but there is doubt concerning their complete integrity. As regards the crossed pyramidal tracts, it was stated that these tracts in the cervical region contained a slight excess of neuroglia, but by Weigert's hematoxylin stain did not appear degenerated. This statement from further examination seems inaccurate. The crossed pyramidal tracts in the lower cervical region were distinctly though slightly degenerated by this method of staining.

The degeneration was very intense in the peripheral portions of the cord in the mid-thoracic region.

The nerve cells of the anterior horns of the lumbar region were much like those of the cervical region. The crossed pyramidal tracts were degenerated. The posterior columns were partly degenerated. There was some question as regards the condition of the anterior roots throughout the cord.

One of the ulnar nerves examined showed much overgrowth of fibrous connective tissue, and considerable degeneration of nerve fibres. A similar but not quite so intense alteration was

found in the musculo-spiral and median nerves. A section from one of the plantar nerves resembled that from the ulnar.

The case was reported as an extraordinary example of external spinal pachymeningitis, and such it was, but by regarding it in the light of the pathological findings, there can be little doubt that the upper limbs were affected. The case was not carefully studied during the last year or two of life. The spasticity and weakness began in the lower limbs, but the distinct though moderate degeneration of the crossed pyramidal tracts in the lower cervical region, with some alteration of the nerve cells of the anterior horns of the cervical region, probably caused a similar condition in the upper limbs. It is surprising that spasticity could have existed with so much overgrowth of fibrous tissue in certain of the nerves, especially in the peroneal and ulnar nerves, with considerable degeneration of nerve fibres, but the degeneration of the crossed pyramidal tracts, intense below the cervical region, explains the spasticity.

The condition of the nerves suggests the interstitial, hypertrophic, progressive neuritis of childhood of Dejerine and Sottas, but the symptoms were not those of this disease. There may have been a tendency to fibrous overgrowth in the nerves as well as on the external surface of the dura.

From the history and pathological findings the conclusion therefore is justified that this case was probably one of slowly ascending paralysis from epidural lesion. Numbness in the toes, extending to the knees, tenderness in the legs, and pain in the lumbar region, are suggestive of a lesion in the lumbo-sacral region, and would not be likely to occur from a lesion in the mid-thoracic region.

More demonstrable of epidural ascending spinal paralysis, though in an acute form, is the following case. The lesion was an epidural sarcoma with some resemblance to endothelioma.

The patient had been under the care of several physicians (Drs Hunt, Talley, and Musser) before he came into my service. The following notes were taken January 26 and 27, 1910:—

The patient was a man 37 years of age. In October 1909 he had had pleuro-pneumonia, and had not been well since. He had lost 50 pounds since November 1909. In the early part of November he began to have pain in the back of the legs and in many of the muscles, and stiffness in the back. The pain

gradually disappeared, but he became progressively weak, until, about a month before he entered the hospital, he was obliged to take to his bed.

He had very little power in the lower limbs, but could move the thighs slightly on the abdomen and move the ankles slightly; the movements, however, in all parts of the lower limbs were so feeble as to amount almost to complete palsy, and the lower limbs were flaccid. The patellar reflex was exceedingly weak on each side, but distinct and persistent ankle clonus was present on each side.

Touch of the finger, the prick of a pin, and hot and cold test tubes were promptly recognised in all parts of the lower limbs, but all forms of sensation were equally, though slightly, diminished here. Atrophy was not present anywhere. Babinski's upward movement of the toes was obtained on each side. The tonicity at the knees and hips was equally diminished, but was normal or more than normal at the ankles. The cremaster and abdominal reflexes were lost. The man was catheterised twice daily, and control of the bowels was lost. The lumbar and thoracic vertebræ were tender to pressure as far as the mid-thoracic region.

The grasp of the right hand was a little diminished, but that of the left hand was greatly impaired. The biceps tendon reflex was distinctly exaggerated on each side, especially on the left side. The tonicity in the left upper limb was somewhat diminished at the wrist and elbow, but was normal in the right upper limb. Sensations of pain, touch, temperature and position, and recognition of objects, were affected in the upper limbs only in so far that they were not quite so acute in the left upper limb. Ataxia in the finger to nose test, probably from weakness, was obtained on the left side but not on the right side. The cranial nerves were not affected. The Wassermann reaction made by Dr E. Corson White was negative.

By February 14, 1910, the left hand had become almost completely paralysed, and the weakness of the right hand had increased greatly. Edema of the lungs developed, and death occurred on this date. Permission was obtained only for removal of the spinal cord, and this was done by Dr Howard T. Karsner. On cutting through the muscles of the back, an abscess cavity, spherical, 2 cm. in diameter containing thick creamy pus, was

encountered about the level of the tenth thoracic vertebra. Upon cutting through the laminae, a mass of thick creamy pus was found extending throughout the length of the canal, moderately adherent to the dura, but without any evidence of penetration through the dura. The dura was opened in two places, and the subdural membranes were found to be smooth and but moderately congested. The spinal cord was given to me for examination. A sarcoma, resembling in the chain-like arrangement of the cells an endothelioma, was found on the posterior external aspect of the dura, extending from the sacral to the cervical region. Moderate secondary degeneration of the crossed pyramidal tracts and of the lateral periphery of the cord was found. Pus was not detected in the membranes by the microscope, and what was found in the spinal canal may have leaked in at the time of the necropsy; the relation of the pus, therefore, to the sarcoma is not easily determined. An extensive sarcoma, such as existed in this case, on the external surface of the dura seems to be an unique finding. The case could not be considered merely as one of tuberculous caries of the vertebrae, for the appearance of the masses of cells under the microscope was distinctly that of sarcoma. Whether a tumour had become infected, or whether a purulent process had arisen in the lungs and become associated with an independent tumour mass upon the dura, must remain undecided on account of the unavoidably incomplete necropsy.

Abstracts

ANATOMY.

THE VOLUME OF THE VENTRICLES OF THE BRAIN. RICHARD (472) W. HARVEY, *Anat. Rec.*, Vol. v., No. 6, p. 301.

A METHOD of obtaining metal casts of the ventricles of the brain is described, and casts from ten brains are diagrammatically represented. These show a very marked degree of asymmetry, especially in the anterior horns. In eight of the ten casts the left anterior horn is the greater, and the author inclines to the belief that this is the usual condition. The volume of the ventricles is determined by the measurement of the volume of water which the

cast displaces. All the brains used had been previously weighed, and a comparison of the volume of the ventricles with the brain-weight shows that they vary inversely. Two tables showing the volumes of the various parts of the ventricular systems of the ten brains described are included in the text. T. B. JOHNSTON.

THE GELATIN METHOD OF PRESERVING ANATOMICAL
(473) **SPECIMENS, WITH ESPECIAL REFERENCE TO NEURO-**
LOGICAL PREPARATIONS. MERVIN T. SUDLER and W. J.
BAUMGARTNER, *Anat. Rec.*, Vol. v., No. 7, p. 339.

THE authors describe the method they have adopted for preparing and preserving sections of the brain for teaching purposes. These sections are made from brains hardened in 10 per cent. formalin, and are stained for several days in a weak solution of borax carmine to which about 10 per cent. of hydrochloric acid has been added. They are then washed and placed in suitable glass dishes, and covered with a warm gelatine solution whose composition is fully detailed. After the gelatine has hardened, melted white vaseline is poured on to prevent evaporation. Two illustrations accompany the text. T. B. JOHNSTON.

A MORPHOLOGICAL STUDY OF THE VAGO-GLOSSOPHARYN-
(474) **GEAL-ACCESSORY NERVE SYSTEM.** (Eine morphologische
Studie über den Nervenkomplex Vago-glossopharyngeal-accessorius). MÖLLGAARD (Skandinav), *Archiv für Physiologie*, Bd. xxv., April 1911, p. 69.

At the outset a short review is given of the attempts which have been made to establish homology between the spinal nerve system and the cranial nerve system, especially the attempts to find what exactly corresponds in the cranial nerves to the four main elements of the spinal nerves, viz., a somatic motor part (anterior root nerves), a somatic sensory part (posterior root nerves), a visceromotor part (from the "processus-lateralis"), and a viscerosensory part. In marked contrast to the case with which the sensory cranial nerves can be homologised with the sensory spinal nerves is the difficulty experienced in establishing in detail the exact homology between the various parts of the cranial motor system and the spinal motor system.

The paper, however, is mainly an endeavour to prove that the vago-glossopharyngeal-accessory nerve system is, in reality, formed like the spinal nerve system and composed of parts which are serially homologous with the chief constituent parts of the spinal nerves. Throughout the paper a sharp distinction is kept between motor nerves innervating directly and motor nerves innervating indirectly. The latter form the type which is "essentially sym-

pathetic," and comprise a pre-ganglionic and a post-ganglionic part.

As far as the spinal accessory nerve in warm-blooded animals is concerned the position is as follows:—

1. To the dorsal roots of the spinal nerves correspond the centripetal tracts going to the dorsal nucleus (vagus) and the solitary tract passing through the ganglion nodosum and the ganglion petrosum.

2. To the ventral direct motor system of the spinal nerves correspond the motor fibres coming from the nucleus ambiguus. These run peripherally partly in the glossopharyngeal but chiefly in the recurrent (vagus).

3. To the indirectly innervating motor system correspond the centrifugal tracts passing through the branchial ganglion in the lower animals and through the ganglion nodosum in mammals.

In conclusion, there is given a scheme which comprises the whole of the vago-glossopharyngeal-accessory system in mammals. The arrangement of this is as follows:—

1. The centripetal system (formed from the neural crest)
 - (a) passing by way of the ganglion nodosum to the dorsal nucleus and higher part of the solitary tract;
 - (b) passing by way of the ganglion petrosum to the solitary tract.
2. The centrifugal somatic system (direct origin from the embryonal medullary tube).

Direct Innervation.

- (a) Nucleus ambiguus—via Glossopharyngeus.
 - (b) Nucleus ambiguus—via Recurrens.
 - (c) Nucleus accessorii—via Nervus accessorius (mammals only).
3. The centrifugal visceral system (sympathetic; peripheral neuron formed from the neural crest).

Indirect Innervation.

- (a) Dorsal nucleus—via Ganglion nodosum—via Vagus.
- JAMES W. DAWSON.

THE MASTICATOR AND MESENCEPHALIC NUCLEI OF THE (475) FIFTH NERVE IN THE RABBIT. MOTOR AND SENSORY LOCALISATION. (*Localisation Motrice et Kinésithésique. Les Noyaux Masticateur et Mésencéphalique du trijumeau chez le lapin.*) E. WILLEMS, *Le Névrate*, Vol. 12, f. 1-2, May 15, 1911, p. 5.

THIS important paper, of 215 pages, contains valuable discussions on the anatomy, development, and histology of the trigeminal

nuclei, followed by the experimental study in the rabbit by the retrograde chromatolysis method, a study of the peripheral apparatus, a list of general conclusions, and a valuable bibliography (but without mention of the papers by May and Horsley and by the Reviewer, published six months before Willems' paper appeared). A list of the many connections of the motor nucleus and of the mesencephalic nucleus is given. Of the latter Willems states that the one specific part of the connections of a motor nucleus is wanting, viz., with the rubro-spinal, vestibulo-spinal, and pyramidal tracts: it is especially striking that the masticator nucleus receives all its connections from the mesencephalic nucleus and gives none to it. Again, the principal protoplasmic prolongation of the vesicular cells has not the characteristic histological structure of the cylindraxon of a motor cell. Willems confesses our ignorance of the distribution of the centrifugal fibres of the mesencephalic fifth root. He failed to find in the rabbit that the root sends collaterals to the cerebellum, as was found to occur in Selachians by Wallenberg and by Johnston.

The following nuclear grouping exists in the masticator nucleus:—

- (1) *Dorsal cell group* gives origin to fibres to:
 - (a) masseter;
 - (b) temporal, from the posterior part of internal border;
 - (c) external pterygoid from antero-internal angle;
 - (d) "Sphenoidal" (deep part of temporal) behind (c),
in external part of dorsal group.
- (2) *Ventro-lateral group*: to internal pterygoid.
- (3) *Ventro-median cell-column*:
 - (a) Inferior prolongation to $\left\{ \begin{array}{l} \text{digastric below.} \\ \text{mylo-hyoid above.} \end{array} \right.$
 - (b) Superior part is doubtful: possibly partly sphenoidal and external pterygoid: also? to muscle "Interne du Marteau" and to the "Péristaphylin interne."

No definite representation of particular muscles was found in the mesencephalic nucleus.

Experimental.—Avulsion of the muscular branches of V^3 , one by one, gave retrograde chromatolysis in practically all the cells of the masticator nucleus, but in only $51\frac{1}{4}$ per cent. of the cells of the mesencephalic nucleus.

The most striking fact was that avulsion of the branch to the mylo-hyoid and anterior digastric gave no cell changes in the mesencephalic nucleus; further, only sixteen cells of that nucleus were altered subsequent to avulsion of the branch to the muscle interne du Marteau: and in the case of the pterygoids and the péristaphylin interne only 10 each; whereas the N. to masseter gave 567, 460

N. sphenoidal 224, 223; and N. temporal 72, 57. Willems is dissatisfied with these results, especially *re* the pterygoids, and promises further experimental work on this aspect of his research. He concludes that the mesencephalic nucleus is (1) a sensory apparatus (*sensibilité motrice*), (2) the homologue of a root-ganglion, (3) an endo-neural ganglion (*resté dans les centres*). Thus, he arrives at the opinion previously expressed by Johnston and by the Reviewer. It is strange that, though he lays so much stress on Johnston's work, and discusses it freely, yet he took no steps to find out whether any of the centrifugal fibres of the root go to skin, as Johnston suggested they might. Nor did he eliminate V¹ and V², as May and Horsley rightly did, and he has left untouched the question, raised by the Reviewer, whether the joint and periosteum of the mandible receive fibres of the root. Thus, in order to complete our knowledge, we still need the following experiments:—(1) avulsion of the articular branches of the auriculo-temporal of V³, (2) avulsion of inferior dental branch peripherad of the junction of the mylo-hyoid branch, (3) of the lingual branch of V³, centrad of the chorda tympani junction. It is possible that not only the joint, but also the teeth, alveolar periosteum, and the tongue may receive fibres from the mesencephalic fifth root. And the question of V¹ and V², and also the question of the relationship of the locus cœruleus to the root, needs re-investigation by experiment; and we want to know whether all the deep mandibular afferents rise in the mesencephalic "nucleus" (really ganglio-nuclear complex), or do some rise in the cells of the Gasserian ganglion? There are many points of interest in Willems' paper which must be consulted in the original. It contains 35 figures and many tables.

LEONARD J. KIDD.

PHYSIOLOGY.

THE INDEPENDENCE OF THE PERIPHERAL SENSORY (476) NEURONE IN VIEW OF THE RESULTS OF EXPERIMENTAL SECTION OF THE OPTIC NERVE IN THE RABBIT. JANIE H. McILROY, *Brain*, March 1911, p. 464.

THE following are the author's conclusions, based on a large number of experiments, the paper being well illustrated:—

(1) The range of variability amongst the so-called normal ganglion cells of the retina is considerable, and the differences are so great as to lead to the conclusion that the features described under the term *chromatolysis* are not necessarily pathological.

(2) The smaller ganglion cells of the retina seem to be specially

liable to changes, and atypical cells are prevalent in the control experiments. They are to be discarded in the present investigation. The large multipolar cell, which in the healthy retina is of most frequent occurrence, appears recognizable as a type. This cell contains a central nucleus with one or more nucleoli, and shows, when treated by the alcohol-toluidin blue method, sharply defined Nissl granules of different sizes arranged more or less concentrically around the nucleus, the ground substance being quite colourless. Departure from this type to any marked extent may be taken to indicate abnormal changes.

(3) It is the absence of truly normal cells in any retina, rather than the occurrence of isolated abnormal cells, that indicates a pathological condition. When the number of normal cells is *nil*, and that of abnormal cells is excessive, degeneration is fairly established.

(4) The gradual sequence of chromolytic change (swelling of the cell body, eccentric position of the nucleus, diffuse staining of the protoplasm, vacuolation, etc.) is not demonstrated by the retinal ganglion cells. One is not always able to demonstrate the changes between the first trace of degeneration in a cell (loss of definition in the Nissl granule) and complete atrophy. Almost normal cells may be found side by side with others in which there is diffuse staining of the protoplasm and nucleus, or others in which the cell is pale and contains small dust-like particles. Degeneration of any cell is indicated by the early loss of definition in Nissl granules and by the final or atrophic stage of the cell-process. Vacuolation is met with in the control with at least as much frequency as in the operated eye, and probably does not represent the existence of a pathological condition during life.

(5) As a result of section of the optic nerve, the fibres of which constitute the axons of the ganglion cells of the retina, degeneration of the ganglion cells sets in as early as forty-eight hours after operation. Degeneration advances with the lapse of time, is pronounced at three weeks, and is complete at thirty-eight weeks, where all the cells are atrophic. The ganglion cells are the central sensory neurones of the retina, and are seen thus to perish upon section of their central processes.

(6) Practically no change takes place in the cells of the outer and inner nuclear layers, *i.e.* in the more peripherally situated neurones existing in contiguity with the ganglion cells. They are therefore seen to remain unchanged when their connection with the central neurones is severed. As peripheral neurones they are thus seen to have an independent existence.

(7) The fact that these peripheral retinal neurones have no special power of resistance is illustrated by the series of autolytic experiments in which degeneration was seen to occur in the

reverse order from that of the optic nerve section experiments. The layer of rods and cones with their nuclei degenerate first, the inner nuclei being next to perish, the ganglion cells being comparatively resistant.

J. H. HARVEY PIRIE.

THE ACTION OF THE CHOROID PLEXUSES ON THE SECRETION (477) OF CEREBRO-SPINAL FLUID. DIXON and HALLIBURTON, *Journ. of Physiol.* (Proc. of Physiol. Soc.), Vol. xl.

THE authors find that while adrenalin, pituitary extract, choline, and other substances produce no increase in the flow of cerebro-spinal fluid in the dog, both extract of brain tissue (either from the grey or the white matter) and extract of fresh or dried choroid plexuses, after intravenous injection, produce a rapid flow for a variable time. Boiling the extract does not destroy its activity. The flow obtained from injection of extract of choroid plexus is far greater than that obtained from extract of brain tissue, and a second injection produces little or no effect unless the intervening interval is from ten to fifteen minutes.

A. NINIAN BRUCE.

RÔLE DE L'HYPOPHYSE DANS LA NUTRITION. DUNAN, (478) *Presse méd.*, No. 31, Avril 19, 1911.

A SHORT account is given here of the results of a number of experiments upon rabbits with pituitary extract. The pituitary of the horse was used, the dried gland being mixed with serum and injected subcutaneously. This was usually followed by diarrhœa, which lasted about two days. The total amount of nitrogen eliminated was diminished, the temperature remained normal, and usually the animals increased slightly in weight. Intravenous injection of the latter, however, is followed by marked loss of weight. Growth appeared to be arrested, and respiration is at first accelerated, later diminished. The blood pressure might be increased or diminished. Sugar appeared in the urine forty-eight hours after the administration of 1 gr. of the above extract, and lasted from three to four days. During this period the amount of urine was usually diminished, but when the excretion of sugar has passed off, polyuria may be found. The glycosuria is produced by some substance present in the insoluble part of the extract. It is also recorded that the toxicity of the urine is increased, that large clots of blood were found in the heart and great vessels after death following intravenous injections, and that the pituitary body was larger and heavier in animals previously fed upon pituitary extract.

A. NINIAN BRUCE.

**FURTHER RESEARCHES ON THE EFFECTS OF CHRONIC
(479) TOBACCO POISONING ON CASTRATED ANIMALS.** (*Altre ricerche sull'avvelenamento sperimentale cronico da tabacco negli animal castrati.*) P. F. BENIGNI, *Riv. di Patol. nerv. e ment.*, Vol. xvi, Fasc. 3, p. 161.

PREVIOUS researches having shown that chronic tobacco-poisoning, whilst it causes a hyperplasia of the suprarenals, gives rise to grave lesions in the other internal secreting glands, such as the thyroid, the ovaries, and the testicles, the author wished to see whether castrated animals would be similarly affected. Experimenting with castrated rabbits, he found that they behaved in the same way towards tobacco poisoning as the normal animal.

F. GOLLA.

EMOTIONAL STIMULATION OF ADRENAL SECRETION.
(480) CANNON and PAZ, *Amer. Journ. of Physiol.*, Vol. xxviii, April 1, 1911, p. 64.

SINCE the major emotional disturbances in an animal indicate the dominance of sympathetic impulses, *e.g.* in the cat, fright causes dilatation of the pupils, inhibition of the stomach and intestines, rapid heart and erection of the hairs of the back and tail, it occurred to the authors to investigate whether this was accompanied or caused by an increased secretion of adrenalin from the suprarenal glands. They accordingly tested the blood from the inferior vena cava above the opening of the adrenal vessels in a cat before and after being terrified by a barking dog. The blood was obtained by passing a catheter, under local anæsthesia, from the femoral vein up to the above level, and was tested for the presence of adrenalin by its inhibiting action upon strips of longitudinal muscle from the cat's intestine. They were not able to detect the presence of adrenalin in blood from the normal animal, but obtained positive results in the blood after fright; and they suggest that possibly some phases of these states are associated with the strenuous and exciting character of modern life acting through the suprarenal glands.

A. NINIAN BRUCE.

**ON THE INACTIVATION OF ADRENALIN IN VITRO AND IN
(481) VIVO.** W. CRAMER, *Journ. Physiol.* (Proc. Physiol. Soc.), June 3, 1911, p. xxxvi.

IF a solution of adrenalin is allowed to stand in contact for about three minutes with a dilute solution of formaldehyde, the

adrenalin has become completely inactivated. Other hormones (secretin, pituitary extract) are inactivated by formaldehyde.

The inactivation of adrenalin by formaldehyde in vitro proceeds at the same rate as the inactivation of adrenalin in vivo. It is much more rapid than the inactivation by oxidation, which is commonly accepted as explaining the inactivation of adrenalin in vivo.

It is suggested that the inactivation of adrenalin in vivo is brought about by a product of cell metabolism which combines with adrenalin in a manner analogous to formaldehyde.

AUTHOR'S ABSTRACT.

PATHOLOGY.

UEBER EIN KNOCHENHALTIGES LIPOMA AM TUBER
(482) **CINEREUM.** ZUCKERMANN, *Virchow's Archiv*, Bd. 203, H. 2,
1911, S. 161.

AN analysis of fifty cases of lipoma of the brain shows only four cases in which bone was present. Of these four, two were recognised by a macroscopic examination only. The two in which microscopic examination was made were situated in different portions of the brain. The present case is therefore regarded as unique.

The case was that of a woman, *at.* 50, admitted with symptoms of meningitis. At the post-mortem tuberculous meningitis was found, also a tumour the size of a pea attached to the posterior surface of the infundibulum. This tumour was yellow in colour and very difficult to cut. It was fixed in Muller-formol, decalcified and cut in serial sections. Microscopic investigation showed the tumour to be a lipoma, containing bone surrounded with a well-formed connective-tissue capsule. The capsule was attached to the pia mater. Ganglion cells were found in the connective tissue of the capsule. There were also evidences of tuberculous inflammation in the capsule at one point. Strands of neuroglia were to be found at the attachment of the tumour. The tumour itself consisted chiefly of fat cells. Towards the centre was a small piece of spongy bone. The interior of the bone was occupied by fatty tissue with a few eosinophil and plasma cells. An area of tuberculous inflammation was found in connection with one part of the bone, with evidence of absorption of the bony tissue.

The author regards the tumour as being teratoid in nature, the result of the inclusion of isolated embryonic cells capable of producing bone and fat. The tumour certainly gave rise to no symptoms during life.

JAMES MILLER.

EIN LIPOM DER PIA MATER CEREBRALIS. HECHT, *Virchow's* (483) *Archiv*, Bd. 203, H. 2, 1911, S. 165.

THE case was that of a woman, æt. 37, who died of puerperal septicæmia. The tumour was found in the left Sylvian fissure. It was round, about the size of a plum, yellow in colour, and covered with pia mater. Microscopically the tumour consisted merely of fat. In the neighbouring brain substance were numerous round calcareous concretions.

The tumour was regarded by the author as arising from the pia mater, in a tissue, therefore, which normally does not contain fat. It may have arisen from connective-tissue cells which had assumed fatty characters, or it might have been of the nature of a dermoid. No other tissue elements were, however, found in the tumour.

Although the patient suffered from periodic headaches, there was no evidence that the tumour was responsible for these, and there were no other localising symptoms. JAMES MILLER.

ON THE PATHOLOGICAL ANATOMY OF MYASTHENIA (484) GRAVIS. (*Sulla anatomia patologica della miastenia gravel.*)

A. NAZZARI, *Il Policlinico*, Vol. xvii., Fasc. 5, p. 193.

IN a case of myasthenia which died from respiratory failure, the author has been unable to find any evidence of pathological alterations of the nervous system. In the muscles he finds the characteristic accumulations of cells described by Weigert-Laqueur. The significance of these cell groups remains for the present uncertain. The author does not agree with Frugoni that the presence of plasma cells and mast cells points to an inflammatory origin. Neither does he admit the relation with the persistence of the thymus, although in his case numerous thymic nodules were found. The experiments that Nazzaria has performed on rabbits with a view to testing the thymic origin of myasthenia have all given a negative result. He also considers that the hypothesis referring the symptomatology to loss of red muscle fibres is also unsound. In conclusion, he considers that the pathogenesis of myasthenia still remains completely obscure. F. GOLLA.

CLINICAL NEUROLOGY.

BROMIDE INTOLERANCE AND BROMIDE POISONING. L. (485) CASAMAJOR, *Journ. of Nerv. and Ment. Dis.*, June 1911, Vol. xxxviii., No. 6, p. 345.

THIS paper contains a short review of the present knowledge of bromide poisoning, together with a discussion of two illustrative

cases which have come within the author's experience. The cause of bromide poisoning he considers to be defective elimination of bromine salts, these salts being retained for the most part in the lymph. The excretion is facilitated by administration of sodium chloride, and there is a specific tendency to bromide retention in individuals whose body fluids are poor in chlorides.

Symptomatically, bromide poisoning may occur in two very different forms—(1) general apathy and dullness, (2) delirium.

The salient features of the author's first case were—(1) early onset of speech difficulty, "the tongue appeared thick," and the bromic breath; (2) gradually developing dullness and apathy; (3) sudden onset of delirium characterised among other things by vivid hallucinations of sight and hearing, misidentification, fabrication, and paraphasia; (4) irregularity of physical signs, irregular, sluggishly reacting pupils, right facial palsy, increase of reflexes, ankle clonus, and general hyperæsthesia; (5) gradual disappearance of above signs on eliminative treatment.

The second case showed difficulty of speech, bromic breath, loss of orientation and memory, but absence of misidentification, paraphasia, and hallucinations. Among the physical signs noted are unequal and sluggishly reacting pupils, right facial palsy, but no alteration of reflexes. In spite of eliminative treatment, violent delirium occurred, followed by progressive weakness and death.

The author considers bromide poisoning not uncommon, especially in the treatment of alcoholic deliria, and puts forward a plea for conservatism in the use of bromine salts in all conditions.

J. A. GUNN.

PARALYTIC ZONA OF THE CRANIAL NERVES AND THE (486) THEORY OF ACUTE POSTERIOR POLIOMYELITIS.

CLAUDE et SCHAEFFER, *La Presse méd.*, May 27, 1911, p. 437.

THIS is the clinical record of a case of cervico-facial herpes zoster, with paralysis of certain cranial nerves. The vesicles about the ear pointed to an involvement of the Gasserian ganglion, those about the mastoid to the jugular and petrous ganglia; the area of the geniculate ganglia was free. Ringing in the ear and later hypoxæmia pointed to an involvement also of the spinal ganglion. There was also motor paralysis affecting the 3rd, 6th and 7th cranial nerves, and herpes in the cutaneous territory of the 2nd, 3rd and 4th cervical nerves. Although no leucocytosis was present in the cerebro-spinal fluid, the authors consider this as probably a case of an acute infection of certain cranial nerve ganglia analogous to herpes zoster, as it is more commonly met

with in the spinal posterior root ganglia (acute posterior poliomyelitis), with secondary spread to the meninges and involvement of certain motor nerves.
J. H. HARVEY PIRIE.

ON SYMPTOMATIC MYOCLONY IN DISEASES OF THE CENTRAL

(487) **NERVOUS SYSTEM IN CHILDREN.** E. FLATAU and W. STERLING, *Neurologia Polska*, 1911, Vol. i., N. 5-6.

DESCRIPTION of three cases: (1) probably meningo-encephalopolio-myelitis infectiosa; (2) meningitis purulenta; and (3) familiaris amaurotic idiocy. In all these cases (in children), besides the symptoms characteristic of each disease, myoclonic symptoms were present. The most interesting, especially, was the first case, its chief feature being convulsive movements in the muscles of the head, face, and extremities. Movements have been observed of three different kinds: (1) convulsions of large range in the muscles of the head, forearms, arms, legs, and feet—these movements reminded one most of choreic movements; (2) movements in the fingers and toes and in the tongue of a stereotyped rhythmical character; (3) continual movements in the muscles in the face of very small range, very quick, and clearly clonic; these movements appeared in separate muscles, but not in muscle groups.

In the first and third cases the myoclonic symptoms passed away in a few weeks or months; the second case died.

J. HANDELSMAN (Warsaw).

A CONTRIBUTION TO THE STUDY OF TUMOUR OF THE

(488) **CEREBELLO-PONTINE ANGLE.** L. BREGMAN and G. KRUKOWSKI, *Neurologia Polska*, 1911, Vol. i., N. 6.

Two cases of tumour in this region. In the first case, confirmed by post-mortem examination, besides the known symptoms (general, cerebellar, and from involvement of the fifth, sixth, seventh, and eighth nerves) there were extraordinary sensory disturbances in the region of the left fifth, *i.e.* opposite to the tumour, with right side hemiparesis, together with sensory changes. The second case concerned a young man, *æt.* 27 years. Besides cerebello-pontine symptoms there were clearly psychical disturbances in the beginning "moria," and afterwards religious insanity. The patient often had fits—giddiness, cerebellar ataxia, unconsciousness, vomiting, and clonic cramps in the limbs of the tumour side. These fits were similar to those described by Ziehen as vestibular. The patient was operated upon, but no tumour was found; he died next day. At the post-mortem examination the tumour was found in the cerebello-pontine angle, at the base of the skull, growing from the dura mater forwards to the middle cerebellar and sphenopalatal fossæ.

J. HANDELSMAN (Warsaw).

A TUMOUR OF THE CENTRUM OVALE AND THE CORPUS

(489) **CALLOSUM.** (Tumore del centro ovale frontale-rolandico e del corpus callosum.) G. MINGAZZINI, *Riv. di Patol. nerv. e ment.*, Vol. xvi., p. 129.

THE case is detailed at some length, and in the light of the post-mortem findings the author discusses the question as to whether it would have been possible to arrive at a correct diagnosis during life.

The patient, aged 33, with no history of tubercle or lues, began to suffer from epileptic fits and crises of temporal headache eighteen months before her death. Later paresis of the inferior extremities most marked on the left side supervened, together with headache and ataxic gait. On examination a year and four months before death she presented the following symptoms. On the right side, paresis of the sixth nerve, paresis and some wasting of the extremities, diminution of the visual field, choked disc, and cranial tenderness. On the left side, paresis of the lower face, ataxy, and paresis of the limbs, most marked in the lower extremity. Some hypoesthesia of the limbs and exaggeration of the deep reflexes. The gait was very ataxic, resembling the cerebellar type. On both sides, but more markedly on the left, there was inco-ordination of the arms. A month later, symptoms of mental enfeeblement were noted; the headache was localised in the right occipital region. In the following weeks the paresis of the extremities became more marked on both sides, but most of all in the left lower extremity. There was well-marked tremor on either side, and convulsive attacks affecting both arms and associated with spasm of the ocular muscles. The head was rotated to the right, and there was hypertonus of the neck muscles. The psychical disorder increased, and was chiefly manifested by loss of memory and enfeeblement of the perceptive and associative faculties. Shortly afterwards she died. The autopsy revealed the presence of a sarcoma invading the fornix, the whole anterior and median parts of the corpus callosum, mostly marked on the left, the posterior zone of the centrum ovale of the frontal lobes on either side and on the left the centrum ovale of the paracentral gyri.

F. GOLLA.

THE LESIONS OF THE LENTICULAR NUCLEUS IN THEIR

(490) **RELATION TO APHASIA AND ANARTHRIA.** (Le lesioni del nucleo lenticolare in rapporto all' afasia e all' anatria.) F. COSTANTINI, *Riv. di Patol. nerv. e ment.*, Vol. xvi., Fasc. 4, p. 242.

THIS long paper contains a very complete discussion of the present state of the question of aphasia. The case on which the paper is

based and the pathological results appear in the main to confirm the views of Mingazzini on the functions of the lenticular nucleus. The case is that of a man, aged 50, a drinker with a doubtful history of syphilis. Three years before he had an attack, leaving him with some paresis of the right face and tongue, together with spastic paralysis of the right extremities. To these symptoms were added marked dysarthric disturbances, so that only with great difficulty was it possible to understand what he said. He suffered from spasmodic laughter. There was no auditory aphasia. A year later the patient became quite unable to pronounce any word, and every attempt to do so was followed by an inarticulate noise. At the same time he showed indubitable signs of auditory aphasia. He failed to understand the most elementary propositions, though it was possible to exclude the hypothesis of dementia, the patient only being slightly mentally enfeebled. To the attacks of spasmodic laughter, spasmodic weeping was now also associated. Death supervened five months later.

At the autopsy an extensive destructive lesion was found in the left cerebral hemisphere, which involved the proximal extremity of the nucleus caudatus, nearly the whole of the lenticular nucleus, of which only a portion of the globus pallidus remained. The anterior and posterior segments of the internal capsule were also involved, together with the white matter of the insular gyri and that of the temporal lobe in its anterior portion. Microscopic examination revealed, also, on the right, a small focus of destruction, affecting the dorsal portion of the putamen, the anterior portion of the internal capsule, the external capsule, and the claustrum. There was complete degeneration of the pyramidal tracts from the left hemisphere throughout their course, whilst the homonymous fibres of the right were unaffected. In both hemispheres there was a loss of white substance of the first, second, and third frontal and the first and second temporal gyri, and on the left of the insular gyri. The nuclei of the facial and hypoglossal nerves were normal on either side. The author asks two questions: Whether the dysarthria, verified when the patient was first seen, depended only on lesions of the opercular bulbar fibres, or whether the destruction of the posterior portion of the lenticular nucleus was also responsible. Secondly, whether the impossibility of pronouncing any word towards the terminal stages of the patient's malady was an aggravation of the pre-existing dysarthria or due to the supervention of motor aphasia. He concludes, firstly, that the initial dysarthria was due in the greater part, if not totally, to the lesion of the posterior portion of the left lenticular nucleus; secondly, that the impossibility of pronouncing any words met with towards the end was due to the complete destruction of the anterior portion of the lenticular

nucleus, which gave rise to a complete and persistent motor aphasia, whilst the auditor aphasia was due to the partial destruction of the white matter of the insula. F. GOLLA.

ON TRANSITORY APHASIA OCCURRING IN CHILDREN
 (491) **SUFFERING FROM TYPHOID.** (Sull' afasia transitoria nel decorso del tifo nei bambini.) U. CALCATERRA, *Riv. di clin. Mediat.*, Vol. viii., Fasc. 5, p. 411.

THE author details two cases of transitory aphasia occurring in his clinic. The symptom is very rare. Adams never observed it in 327 children, Allaria found it twice in 143 cases. The author has observed it twice in 324 cases. The symptomatology corresponds to true aphasia, and it cannot be admitted that the patients have only a loss of will to speak. The many theories to account for such nervous disturbances can be divided into three groups: hysteria, circulatory disturbances in the cerebral centre, and fine lesions, easily reparable, of the nerve-cells. Discussing his two cases, the author assigns to the first thrombotic trouble, whilst in the second he considers that the symptom was due to fine cellular disturbances easily repaired. F. GOLLA.

ON VERTEBRAL TUBERCULOSIS (MAL DE POTT) WITHOUT
 (492) **DEFORMITY.** J. ROTSTADT, *Neurologia Polska*, 1911, Vol. i., N. 6.

VERTEBRAL tuberculosis may occasionally occur without visible signs of deformity, the only symptom being either inflammatory or nervous disturbances due to the spinal pressure. The absence of the deformity may be observed in people of advanced age. The author describes the following case:—A man, æt. 72, was admitted to the hospital with symptoms of a spinal cord lesion in the region of the eighth cervical segment. The symptoms [viz., wasting of the muscles of the left hand, sensory disturbances (at first dissociation of the sensibility, afterwards disturbances of all kinds of sensibility), spastic changes, pain, and cramps in the lower limbs, and disturbances of the sphincters] showed a disease of the spinal cord—syringomyelia (?); but a certain diagnosis could not be made until after death, which occurred six months later. The post-mortem examination showed softening of the lower cervical vertebræ; the dura at the same level was thickened and adherent to the spinal cord, and a caseous mass surrounded the cord at the level of the eighth cervical segment, where the cord was very much compressed. The author also describes the microscopical changes in the cord. J. HANDELSMAN (Warsaw).

A CASE OF RAYNAUD'S DISEASE. LEMMON, *Jour. Amer. Med. Ass.*, Vol. lviii., No. 4, July 22, 1911, p. 290.

A DESCRIPTION of an unusually severe case. The patient was a man aged 30, no history of syphilis. Father alcoholic, mother syphilitic. Two years ago he had a sudden dry gangrene of the tips of his right fingers, which developed in a few hours. No exciting cause was noticed. Gangrene and amputation spread up the arm until only the upper third remained. The fingers of the left hand then became affected, and later the left great toe and several areas on the chest. After admission to hospital he developed marked nervous symptoms. He was six times seized with total motor and sensory paralysis. Twice he became totally blind, and remained so for twenty-four to forty-eight hours respectively. Motor aphasia came and went several times, independent of the paralytic attacks, and he was continually seized with epileptoid attacks, not attended by loss of consciousness, but very painful. The latter part of his illness was accompanied by intense pain, only partially controlled by morphia.

At the post-mortem the organs of the chest and abdomen are stated to have been found normal, but the brain and spinal cord were not examined.

The author points out that the above symptoms may all be explained on the grounds of localised temporary anæmia, produced by arterial spasm, and states that without the gangrene the clinical picture would have been one of hysteria major.

A. NINIAN BRUCE.

INTRATHYROID HÆMORRHAGE FOLLOWED BY ACUTE
(494) **DYSPNŒA AND DEATH.** CHAMPION and ALDRIDGE, *Brit. Med. Journ.*, July 15, 1911, p. 109.

A DOMESTIC servant, aged 24, who previously suffered from a simple goitre, fell on to the left side of her face on jumping off a car. Her injuries were thought at the time to be trivial, but she was found a quarter of an hour later on the doorstep of the hospital breathing with great difficulty and clutching at her throat, each inspiration being accompanied by a throwing forward of the neck. There was no vomiting nor hæmorrhage from the nose, mouth, or ears. The pupils were equal. She died from heart failure an hour and a half after the accident. At the necropsy the thyroid gland was found much enlarged, the main bulk being formed by a hæmorrhagic cyst situated behind the upper portion of the manubrium sterni. There was no extravasation of blood into the surrounding tissues. Death was considered to be due to either double shock,

direct pressure on the trachea, thyroid intoxication, or pressure on the vagus or sympathetic nerves. Very brief notes of six other cases are given.

A. NINIAN BRUCE.

ACUTE INFLAMMATION OF THE THYROID GLAND. W. S. (495) ROBERTSON, *Lancet*, April 8, 1911, p. 930.

A CASE OF ACUTE INFLAMMATION OF THE THYROID GLAND. (496) C. W. BONNEY, *Lancet*, July 15, 1911, p. 930.

IN the first of the above papers three cases are described and a brief synopsis of the literature is given. In the second paper one case is recorded. The symptoms, apart from those directly due to the inflammation, consist of an increasing swelling in the front of the neck liable to be mistaken for a rapidly growing sarcoma, and causing both dyspnoea and dysphagia from pressure. Two classes of cases may be distinguished, those arising in a previously healthy gland and those in which the gland is already goitrous. The author finds that the former condition is more common (66 per cent.). It may occur in epidemics, and is more common in women than in men, occurring more frequently between the ages of twenty and forty years. The etiology is not known, but the condition may arise during the course of various acute infectious diseases. In the few cases passing on to suppuration in which the organism was examined, the pneumococcus was most frequently found. The prognosis is not bad and often depends chiefly upon the nature and gravity of the disease which the thyroiditis complicates.

A. NINIAN BRUCE.

THE EXPERIMENTAL TRANSMISSION OF GOITRE FROM MAN (497) TO ANIMALS. M'CARRISON, *Proc. Roy. Soc.*, Series B, Vol. lxxxiv., 1911, p. 155.

THE author finds that he could produce a hypertrophy of the thyroid gland of goats by feeding them upon water fouled by passing through soil containing the faeces of goitrous individuals. It is not possible yet to state whether this hypertrophy is due to the action of the infecting agent of goitre or only to the inorganic impurity of the water thus contaminated. Earth worms do not appear to be concerned in the spread of goitre. The enlarged thyroids showed almost complete disappearance of the masses of cells lying between the vesicles, the connective tissue stroma was unaltered, and the hypertrophy was found to be wholly due to distension of the vesicles with colloid and the formation of new vesicles from the intravesicular masses of cells.

A. NINIAN BRUCE.

MYXCEDEMATOUS DWARFISM, ETC. (*Nainisme myxœdémateux : (498) absence de corps thyroïde et d'hypophyse.*) CHARPENTIER and JABOUILLE, *L'Encéphale*, July 10, 1911, p. 41.

ALTHOUGH in some respects incomplete, this case of myxœdematous dwarfism in a woman of 34 is of considerable interest. At the post-mortem the thyroid and pituitary body were both found to be wanting, the thymus was not persistent, the ovaries and the suprarenals were normal, save for two cysts in one of the former. The problem is, how much to attach to the suppression of hypophyseal function. An excellent photograph of the patient accompanies the paper. S. A. K. WILSON.

TETANY IN THE PUERPERIUM. (*De la tétanie dans l'état (499) puerpéral.*) KLEIN, *Thèses de Paris*, 1910-11, No. 302.

TETANY in the puerperium was relatively frequent between 1830 and 1850, when it may possibly have existed in epidemic form, but it is doubtful if many of the cases so described were really tetany. At the present day it is extremely rare, so that Prof. Pinard has seen only one case. It usually occurs in those predisposed either by neuropathic heredity or parathyroid insufficiency. The thesis contains thirty-one cases, collected from literature, of tetany occurring in pregnancy or after delivery. J. D. ROLLESTON.

LATE INFANTILISM IN THE ADULT. (*Nouveau cas d'infantilisme tardif de l'adulte.*) C. GANDY, *Bull. et mém. de la Soc. méd. des Hôp. de Paris*, 1911, xxxi., p. 837.

THE patient was a man, aged 42, admitted to hospital for pulmonary tuberculosis. The symptoms of retrograde infantilism had developed without apparent cause at the age of thirty (*cf. Review*, 1911, ix., p. 393). The literature is reviewed, and the part played by the glands of internal secretion discussed. Including the present case, there are 18 on record, 16 in men and 2 in women. Gandy suggests that some of the cases described by the name of adipo-genital syndrome of the hypophysis should be regarded as examples of late infantilism (*v. Review*, 1910, viii., p. 183, and 1911, ix., p. 324). J. D. ROLLESTON.

ON RECKLINGHAUSEN'S DISEASE. (*Beitrag zur Kenntnis der (501) Recklinghausenschen Krankheit.*) O. MAAS, *Monatsschr. f. Psychiat. u. Neurol.*, 1910, xxviii., Ergänzungsheft, p. 167.

A RECORD of a fatal case in a man, aged 19, belonging to a tuberculous family, in whom the tumour formation was confined to the

central nervous system and large peripheral nerves without involvement of the skin. An exceptional clinical feature was the occurrence of marked remissions in the course of the paralytic phenomena. The histological character of the tumours was not settled, but they were probably of a gliomatous character. A remarkable finding was an advanced syringomyelia of the cervical cord, which has hitherto not been recorded in any case of Recklinghausen's disease. Secondary degeneration was almost entirely absent.

J. D. ROLLESTON.

TREATMENT OF TABES AND NERVE SYPHILIS BY ARSENO-

(502) **BENZOL.** (*Traitement du tabes et de la syphilis nerveux par l'arséno-benzol.*) J. A. SICARD and M. BLOCH, *Bull. et mém. de la Soc. méd. des Hôp. de Paris*, 1911, **xxx**i., p. 664.

THE writers describe their technique and results. They have abandoned subcutaneous and intramuscular injections in favour of the intravenous method. A series of six injections is recommended, with an interval of ten days between each injection. In some cases mercurial treatment was combined with arseno-benzol. Under the influence of repeated small doses of arseno-benzol—25 to 30 grammes for men, and 15 to 20 grammes for women—the symptoms of tabes improved; the pains diminished, the bladder troubles became less, the gait became more steady, and there was an improvement in the general condition. No bad effects were observed.

Seven cases of general paralysis were treated, but none showed any improvement. Unlike Milian and Lévy-Valensi, the writers do not attach much value to spinal lymphocytosis, as it is apt to vary, apart from any treatment.

J. D. ROLLESTON.

A COMPARATIVE STUDY OF A CASE OF PARESIS AND ONE

(503) **OF TABES DORSALIS AFTER THE ADMINISTRATION OF SALVARSAN.** A. L. WOLBARST, *N.Y. Med. Journ.*, 1911, **ii.**, p. 22.

BOTH cases had a syphilitic history, had resisted mercury and the iodides, and seemed on the downward grade without hope of a cure. In both a mild chronic interstitial nephritis was present. An intragluteal injection of 0.5 grammes of salvarsan was given in each case. The paretic patient showed a decided, though temporary, improvement, while in the tabetic patient an immediate ill effect was observed, which continued up to his death from uræmia twelve days after the injection. No necropsy.

J. D. ROLLESTON.

A PRELIMINARY REPORT ON THE EFFECT OF SALVARSAN (504) ON SYPHILITIC AND METASYPHILITIC AFFECTIONS OF THE EYE AND UPON THE APPARENTLY HEALTHY EYES OF SYPHILITICS. M. ROSENBAUM, *Med. Record*, 1911 ii., p. 177.

ROSENBAUM records twenty-two cases, and thus summarises his results:—

1. The preparation is very effective in secondary and tertiary manifestations of the uveal tract.
2. It causes no appreciable subjective or objective symptoms on the healthy eyes of syphilitics.
3. No appreciable improvement has been noticed in parasyphilitics and in cases of optic atrophy. J. D. ROLLESTON.

TWO CASES OF SEVERE OCULAR SYPHILIS OCCURRING A (505) FEW WEEKS AFTER REPEATED INJECTIONS OF ORGANIC COMPOUNDS OF ARSENIC. (*Deux cas de syphilis oculaire grave, survenus quelques semaines après des injections répétées de composés organiques de l'arsenic.*) ROCHON-DUVIGNEAUD and MONBRUN, *Bull. et mem. de la Soc. méd. des Hôp. de Paris*, 1911, xxxi., p. 731.

Two young women suffering from secondary syphilis received each three injections of an arsenical compound—in one case Mouneyrat's drug, in the other "606." In five and three weeks respectively after treatment both were attacked with iritis and optic neuritis. The cases are recorded to prove that a rapid sterilisation of syphilis by a chemical agent is a delusion.

J. D. ROLLESTON.

OPTIC NEURITIS AND "606." (*Névrite optique et "606."*) E. (506) JEANSELME and C. COUTELA, *Bull. et mem. de la Soc. méd. des Hôp. de Paris*, 1911, xxxi., p. 745.

A RECORD of two cases of secondary syphilis in young women in whom the acute symptoms cleared up rapidly after two intravenous injections of "606," mercury having proved ineffective. In neither case could the optic neuritis be attributed to "606."

J. D. ROLLESTON.

ESTIMATION OF SPINAL LYMPHOCYTOSIS AS A GUIDE TO
 (507) **PROGNOSIS AND TREATMENT IN NERVOUS AND**
SYPHILITIC DISEASES. (La numération des éléments
 cellulaires du liquide céphalo-rachidien pour apprécier l'évolu-
 tion des lésions et l'action thérapeutique dans les maladies
 nerveuses et syphilitiques.) MILIAN and LÉVY-VALENSI, *Bull.*
et mém. de la Soc. méd. des Hôp. de Paris, 1911, xxxi., p. 707.

PREVIOUS observers have found that mercurial treatment has had no effect on the spinal lymphocytosis of tabes. The writers employing Nageotte's method of estimation obtained the following encouraging results from the use of "606." In 2 cases of early tabes there was a rapid fall of lymphocytosis after injection. Out of 11 cases of advanced tabes, in 4 the lymphocytosis remained stationary, or increased, in spite of treatment, and in the remaining 7 it fell rapidly. In 2 cases of cerebral syphilis the lymphocytosis was not affected, but in 3 cases of general paralysis the injection was followed by a rapid fall in the lymphocytosis.

J. D. ROLLESTON.

ACTION OF "606" ON SPINAL LYMPHOCYTOSIS IN TABES.
 (508) (Action du "606" sur la lymphocytose spinale des tabétiques.)
 H. DUFOUR, *Bull. et mém. de la Soc. méd. des Hôp. de Paris*,
 1911, xxxi., p. 715.

THE patient was a woman, aged 31, whose case Dufour had already recorded (*v. Review*, 1908, vi., p. 553). In spite of prolonged mercurial treatment, followed by three intravenous injections of "606," the spinal lymphocytosis was not affected.

J. D. ROLLESTON.

THE PSYCHICAL SEQUELÆ OF CEREBRO-SPINAL MENINGITIS.
 (509) (Des séquelles psychiques de la méningite cérébro-spinale.)
 E. CLOS, *Thèses de Paris*, 1910-11, No. 325.

THE material on which the thesis is based and the conclusions are substantially the same as those of Voisin and Paiseau's paper (*v. Review*, 1910, viii., p. 700).

J. D. ROLLESTON.

MENINGITIS FOLLOWING MEASLES. C. A. BASKER, *Lancet*,
 (510) Aug. 19, 1911, p. 499.

A NOTE of three cases of meningitis coming on at short periods after attacks of measles. One case recovered completely, and

although meningitis was diagnosed it was not proved, as the cerebro-spinal fluid showed neither organism nor excess of cells. In the other two cases, post-mortem revealed a purulent meningitis, but in neither case was the causal organism definitely ascertained.

J. H. HARVEY PIRIE.

JAW-WINKING PHENOMENON. (La mâchoire à clignements.)

(511) GAULTIER et BUCQUET, *Gaz. des Hôp.*, avril 27, 1911, p. 732.

APART from cases associated with congenital ptosis the authors have found in the literature only five cases of acquired jaw-winking, to which they now add a sixth.

On awakening one morning the patient noticed that the whole of the left side of his body felt cold, while the left side of his face was of a bluish colour and felt congested.

On examination the face appeared symmetrical except for slight left ptosis, which could voluntarily be made to disappear.

On depression of the lower jaw the left upper lid became raised so as to render a band of sclerotic visible above the cornea. Moving the jaw from side to side produced the same effect, and contraction of the masseter and temporal muscles caused the phenomenon to a slight extent.

The authors consider that explanations assuming abnormal nuclear relations for the nerve supply of the levator palp. sup. are not applicable in this case, which they think depended on the predominance of naturally associated movements in the presence of enfeebled antagonism. In this case there was some hypotony of the left side of the face, including the orbicularis palpebrarum, whose antagonistic action to the levator was thereby diminished.

The cause of the attack was unknown, but it might have been associated with glycosuria, which was present.

H. M. TRAQUAIR.

THE "JAW-WINKING" PHENOMENON. (La mâchoire à cligne-

(512) ments, ou mouvements involontaires d'élévation palpébrale associés aux mouvements de la mâchoire.) GAULTIER and BUCQUET, *Soc. de Neur. de Paris*, April 6, 1911.

AN interesting case of the above rare condition, acquired, after a somewhat indefinite and brief illness, in a man aged 55. Only five acquired cases have been reported: the great majority showing the phenomenon are cases of congenital ptosis.

The authors suggest that normally there are associated movements between the levator palpebræ and the depressors of the lower jaw, that the slight ptosis on the left side, which their patient showed, is coupled with slight hypotonia of the left facial musculature,

that this impairs the normal relationship between the orbicularis and the levator, hence the normal associated movement is exaggerated when the lower jaw is depressed.

S. A. K. WILSON.

REVISION OF THE NEUROSES: PSYCHONEUROSES. (Revision (513) *du chapitre des névroses: des psychonévroses.*) BERNHEIM, *L'Encéphale*, July 10, 1911, p. 1.

THIS is an interesting short paper pointing out the frequency with which the word "neurosis" is employed inaccurately and so as to lead to confusion. Dr Bernheim concludes that the absence of a discoverable lesion is not sufficient for the classification of a given nervous disease among the neuroses. The latter are to be distinguished by their clinical characters, indicating a pure disturbance of function without anatomico-pathological evolution. The only conditions presenting these characters are the psychoneuroses, included in which is hysteria. Emotional in origin, capable of abrupt and spontaneous cure, and of being reproduced experimentally, they are certainly due to pure dynamic or functional modifications. Neurasthenia and psychasthenia cannot be classed with the psychoneuroses.

S. A. K. WILSON.

"IDIOPATHIC" PERFORATING ULCERS. (*Maux perforants* (514) *"idiopathiques."*) SICARD and BLOCH, *Soc. de Neur. de Paris*, April 6, 1911.

A MAN of 57, whose Achilles jerks were absent, but who presented no other indication whatever of disease of the central nervous system (Wassermann negative, cerebro-spinal fluid normal) had symmetrical typical perforating ulcers on the soles of the feet, each surrounded by a zone of a few centimetres radius in which all forms of sensibility were lost without dissociation. A few similar or somewhat similar cases have been recorded.

S. A. K. WILSON.

A CONVENIENT METHOD TO TEST THE VISUAL FIELDS FOR (515) **COLOUR WITHOUT THE USE OF A PERIMETER.** TOM A. WILLIAMS, *Lancet*, Aug. 19, 1911, p. 500.

INVERSION of the visual fields is not pathognomonic of hysteria, but whenever the intracranial tension is increased to the point where there is an interference with the functions of the neurons which conduct visual impressions, the visual field is often inverted, so that red is perceived sooner than blue—the opposite being always the case in a normal person.

This inversion may be demonstrated clinically in the following manner. The patient sits with his back to a good light, looking fixedly in the distance. He is directed to signal as soon as he sees any movement. The visual field is then approached by the observer's hand, which holds alongside and parallel two objects coloured, of an intense pure bright red and blue respectively. After the patient signals he is asked to signal again as soon as he perceives any colour, while the centre of the field is very slowly approached. The observer stops, and asks what colour was seen. To corroborate, the movement is then continued until the other colour is also seen.

J. H. HARVEY PIRIE.

RETINOSCOPY WITHOUT ATROPINE, AND SOME OBSERVATIONS ON OCULAR HEADACHES. ALEXANDER WILSON,
(516) *Brit. Med. Journ.*, Aug. 5, 1911, p. 258.

Retinoscopy.—The refraction was estimated by retinoscopy without atropine in 100 young people who were mostly hypermetropes, and again after atropine had been used for a week in the ordinary manner, when it was found that atropine brought out about two dioptries more of hypermetropia. Tscherning and others do not approve of the use of atropine in refraction work, as it brings under inspection the less regular periphery of the cornea. With the pupil undilated only the ordinary or working part is tested. Some authorities maintain that astigmatism of the cornea is counterbalanced by an astigmatism of the lens, of an opposite nature, produced by an irregular action of the ciliary muscle. The retinoscopies are analysed, and while certain phenomena seem to support this view, it is pointed out that these phenomena can be explained by purely static conditions.

Headache.—A series of 200 cases of headache is analysed. The refractive conditions found were classified, and it is contended that the incidence does not show any preferential basis of etiology; or, if there is any preference, it is for cases where there is little departure from the normal. Disturbance of muscle balance is present in 60 per cent. of the cases, and the prevalent variety suggests overtaxed or feebly developed accommodation.

AUTHOR'S ABSTRACT.

VISUAL HALLUCINATIONS AND HEMIANOPIA. (Hallucinations visuelles et hémianopsie.) CAMUS, *L'Encéphale*, June 10, 1911, p. 521.

THE case is that of a man of 63, with arterio-sclerosis and interstitial neuritis. The right eye was completely blind from

suppuration, subsequent to an operation for cataract and detachment of the retina. In the case of the left eye, however, there was a typical temporal hemianopia, with conservation of macular vision. Wernicke's reaction was negative. The visual hallucinations, which had been present for some years, had recently become so constant as to be practically permanent. A white or coloured spot would appear in front of the patient, then rapidly form itself into some object, or into the head and body of a person; sometimes the figures were those of people with whom he was familiar. The men were nearly always dressed in black, with black hats, and seemed to be in the dark; women usually had white hats, but the colours of their clothes kept changing. The figures were always more or less transparent, and only their contours were well seen. They often were lilliputian in size, and at a distance. The hallucinations were unaccompanied by any other mental impairment or disturbance of any sort. Their topography was especially interesting. The figures of people or objects always appeared exactly in front of the patient, and were strictly confined to the part of his visual field that remained normal. In the blind part he very occasionally saw splashes of red colour. Apparently in the matter of the hallucinations occurring in the normal part of the visual field the case is unique. It seems clear that while the area of vision causing the hemianopia must have been in the right hemisphere, the area concerned with the genesis of the hallucinations must have been in the left hemisphere. The sensory area in the latter case must have been at least partly excitable, and must have been still in continuity with the peripheral neurones in order that projection might be possible. For conscious hallucinations of this interesting type Dupré has coined the word "hallucinosis," which appears very suitable.

S. A. K. WILSON.

LESIONS OF THE NEURO-FIBRILS OF THE CEREBELLUM IN
 (518) **GENERAL PARALYSIS.** LAIGNEL-LAVASTINE and PITULESCU, *L'Encéphale*, May 1911, p. 451.

In general paralysis the Purkinje cells of the cerebellum are less altered than the giant pyramidal cells of the cerebral cortex. Neuro-fibrillar alterations (methods of Cajal and Bielschowsky) are diffused through the cells of the cerebellum, but are not uniform. Small cells like those of Golgi are more affected than the Purkinje cells. (Similarly in the cerebrum the small pyramidal cells and polymorphic cells are more affected than large pyramidal cells and Betz cells.)

Extracellular fibrils seem normal.

S. A. K. WILSON.

**A CASE OF LEFT-SIDED IDEO-MOTOR APRAXIA IN A LEFT-
(519) HANDED PERSON.** (*Un cas d'apraxie idéo-motrice gauche
chez un gaucher.*) ROSE, *L'Encéphale*, June 10, 1911, p. 536.

AN interesting case of typical ideomotor apraxia in a left-handed patient. Among various points to which allusion might be made is the fact of the patient's inability quickly to relax the muscles of the arm when they have once contracted—a form of so-called tonic perseveration which has been noted by Liepmann, Van Vleuten, and Wilson. The case is of value because of the left-handedness of the patient; the clinical symptoms point to a subcortical lesion in the post-parietal region of the right hemisphere.

S. A. K. WILSON.

**OSTEO-ARTICULAR TROPHIC DISTURBANCES IN HERPES
(520) ZOSTER AND RADICULAR NEURITIS.** (*Les troubles
trophiques ostéo-articulaires dans le zona et les névrites
radiculaires.*) CLAUDE and VETTER, *L'Encéphale*, May 1911,
p. 420.

ATTENTION is drawn to a rare, but not unknown, complication of herpes in which osteo-articular defects, not unlike chronic rheumatism, supervene. Two cases are described. The affection involves the fingers and the distal row of the carpus; the joints are swollen and painful, the fingers distorted. Ankylosis sets in. Radiographic examination reveals abnormal transparency of the affected bones, seemingly in relation to decalcification of osseous tissues. The lesions closely resemble those found sometimes after traumatic lesions of peripheral nerves.

S. A. K. WILSON.

**THE IMPAIRMENT OF VOLUNTARY MOTILITY IN LITTLE'S
(521) DISEASE.** (*Sur l'état de la contracture, et sur les troubles de
la motilité volontaire dans la maladie de Little.*) M. and
Mme. LONG, *Soc. de Neur. de Paris*, April 6, 1911.

THE authors emphasise one point in particular, that the impairment of function of the limbs is not dependent on the presence of rigidity, or proportional to the degree of the latter; nor is there any diminution of muscular force. The condition is one of imperfection of voluntary movements, which are slow, uncertain, and inexact. If the cases are severe, this voluntary imperfection may degenerate into the choreo-athetotic type.

S. A. K. WILSON.

PSYCHIATRY.

THE ANTITRYPTIC POWER OF THE SERUM IN SOME FORMS (522) OF MENTAL DISEASE. (*Il potere antitriptico del siero di sangue in alcune malattie mentali.*) G. SIMONELLI, *Riv. di Patol. nerv. e ment.*, Vol. xvi., Fasc. 3, p. 143.

USING the method of Fuld, the author has investigated the antitryptic index in a large number of syphilitic and other psychoses. The occasional variations which he has found would not appear to be outside the limits of experimental error with this not very delicate method, and the occurrence of minor maladies in some of the graver cases would be sufficient to account for any non-experimental variations, particularly as no observations appear to have been made of the temperature of the patients.

F. GOLLA.

A CONTRIBUTION TO THE KNOWLEDGE OF THE PSYCHO- (523) LOGICAL MECHANISM OF IDEAS OF PERSECUTION. ST BOROWIECKI, *Neurologia Polska*, 1911, Vol. i., N. 6.

THE author describes a case of dementia paranoides with persecution ideas of sexual origin, which he analyses by the Freud-Jung-method.

J. HANDELSMAN (Warsaw).

Reviews

DEATH: ITS CAUSES AND PHENOMENA. By HEReward CARRINGTON and JOHN R. MEADER. London: William Rider & Son. Pp. 552. Price 8s. 6d.

IT is as natural to die as to be born, says Marcus Aurelius, but if we may judge from the signs and wonders which, according to the folklore of all lands, herald the approach of death, and the awe and mystery felt to surround it, few among us have attained to the conviction of the stoic philosopher. Any scientific inquiry into the nature of death has been hindered both by the strength of the emotions which attend it, and by the human tendency to accept without question any phenomenon which is universal. In a remarkable book entitled "Death: Its Causes and Phenomena," Mr Hereward Carrington and Mr J. R. Meader attempt to press beyond this easy acceptance of death as inevitably bound up with the very conditions of organic life, and impress upon us that the real nature of death is to all intents and purposes absolutely

unknown—has, in fact, never been questioned or sought out at all.

The book is divided into three parts—Physiological, Historical, and Psychological. The physiological part contains twelve chapters, viz.:—I. The Scientific Aspect of Life and Death. II. The Signs of Death. III. Trance, Catalepsy, Suspended Animation, etc. IV. Premature Burial. V. Burial, Cremation, Mummification. VI. The Causes of Death. VII. Old Age: its Scientific Study. VIII. The Questionnaire on Death—Answers. IX. My Own Theory of the Nature of Death (Hereward Carrington). X. My Own Theory of the Nature of Death (John R. Meader). XI. On the Possible Unification of our Theories. XII. General Conclusions. The historical part contains four chapters, viz.:—I. Man's Theories about Immortality. II. The Philosophical Aspect of Death and Immortality. III. The Theological Aspect of Death and Immortality. IV. The Common Arguments for Immortality. And the psychological part contains eight chapters, viz.:—I. The Moment of Death. II. Visions of the Dying. III. Death described from Beyond the Veil. IV. Experiments in Photographing and in Weighing the Soul. V. Death Coincidences. VI. The Testimony of Science—Psychical Research. VII. On the Intra-Cosmic Difficulties of Communication. VIII. Conclusions.

These headings indicate the comprehensive way in which the subject is regarded and the diverse interests to which the work makes appeal. Chapters of great practical importance are those on the signs of death and on premature burial. In the former the authors accept Sir Benjamin Ward Richardson's conclusion that there is no infallible sign of death unless perhaps putrefaction, but that we must rely rather upon a combination of signs. In the latter they give a decidedly gruesome collection of instances in which premature burial has either actually or almost taken place, and this is followed by a brief account of the precautions taken by the legislatures of Europe and America to prevent the occurrence of such catastrophes.

As is indicated by the titles of chapters ix. and x., the authors differ somewhat as to the intimate nature of death, though, as they also point out, the two theories are not incompatible. Mr Carrington's theory will be known in outline to readers of his "Vitality, Fasting, and Nutrition." Briefly put, it is that life in its physical manifestation is a species of vibration, and that death is "the inability of the life force to raise to the requisite rate of vibration the nervous tissue upon which it acts—its manifestation thus being rendered impossible." To take a special instance, "in the case of heart-failure, the rate of the life-vibration would be either raised or lowered so suddenly and so tremendously that its manifestation

would no longer be possible. Just as light would suddenly jump into invisibility were we suddenly to increase its rate of vibration, and remain invisible indefinitely so long as we retained that rate, just so would life instantly become invisible and intangible, and would cease to function on this plane where it is visible or sensible to us." According to Mr Meader—though we scarcely do the idea justice in presenting it thus baldly without any preamble—death is chiefly due to auto-suggestion; it is a habit ingrained in the constitution of the race. The human body is a self-renewing machine which might well seem calculated to go on for ever; the old man's body is really no older than the child's; but he thinks it is; he gives up his active habits, he resigns himself to be set aside, he dies, in fact, mainly because of his belief that he must die.

The fact that both writers are known to have been actively associated with the Psychical Research Society gives a general idea of the lines of the psychological treatment. The aim has been to present evidence bearing on the problem whether consciousness ever exists apart from and after the death of the body. The nature of this evidence is now too well known for presentation here. An idea of its range will be gained from the headings given above. Suffice it to say that from the abundant material available in the records of the S.P.R. and elsewhere, the authors have made a judicious and impressive selection; and the dispassionate tone of their exposition should help in removing the prejudice of scientific men against the investigation of a region where it must be admitted charlatanism and fraud are dangerously prevalent.

The book, as a whole, is full of practical suggestiveness, and cannot fail to be read with the deepest interest, more particularly at a time when the set of scientific thought is away from the materialistic biology of the end of the nineteenth century. The discredited idea of a vital force, which does not enter the circle of those forces to which the doctrine of the conservation of energy applies, is showing signs of rehabilitation. The medical profession is openly recognising a sphere of "mental therapeutics," and attempting seriously to delimit that sphere. In a recent number of the *British Medical Journal*, Sir Clifford Allbutt says: "It must be granted, then, in respect of faith-healing, that spiritual influences, divine directly, or indirectly through human mediation, may to some unknown power radiate from these highest currents downward through the more and more 'material' planes, arousing them less and less as they have become more and more static in order." And again: "Probably no limb, no viscus, is so far a vessel of dishonour as to lie wholly outside the renewals of the spirit; and to the infinite intelligence every accession of spiritual life would be apparent in a new harmony of each and all of the

metabolic streams and confluences of the body." And in the *Edinburgh Medical Journal*, May 1911, still more uncompromisingly, Dr A. J. Brock says: "I believe 'Life' to belong to an entirely different category of things from the sense impressions which we call 'matter and energy.' Life is an unknown principle which, as Sir Oliver Lodge has said, while manifesting itself through the physical, essentially transcends and dominates it." In philosophy also, the writings of James and the notably original and inspiring work of the French philosopher Bergson, are permeating the thought of the time in such a way as to render the materialistic determinism of such men as Haeckel increasingly unthinkable. Bergson's doctrine of the *élan vital* might well supplement and underlie a vibratory theory of life such as that set forth above. Hence Mr Carrington and Mr Meader have put forward their work at a happy moment when the general tendency of thought is such as to admit of their theories receiving the discussion, amplification, and modification which they require and which their authors desire for them.

MARGARET DRUMMOND.

DIE EPIDEMISCHE KINDERLÄHMUNG. Professor PAUL H. RÖMER. Berlin : Julius Springer, 1911, p. 256. M. 10.

THIS work gives a more or less full account of our knowledge of acute poliomyelitis, and in particular gives a very detailed description of the experimental disease.

Commencing with a short historical summary and a description of the symptomatology in man, the author passes on to the etiology, where a long account is given of the features of experimental poliomyelitis in monkeys and the nature of the virus. This is a subject at which the writer has worked much himself, and the whole chapter bears the imprint of personal knowledge. Professor Römer is very sceptical as to poliomyelitis having been induced in other species of laboratory animals. In the chapter on Pathology and Pathogenesis, the descriptions and illustrations are also chiefly concerned with the experimental disease in monkeys, but a comparison is given between these and the disease in man. Another chapter deals with the epidemiology, and the last takes up the control of the disease, dealing with the still open problems of prophylaxis, immunisation, active and passive, serum diagnosis and therapy, etc. There is a very full bibliography.

J. H. HARVEY PIRIE.

ANATOMY OF THE BRAIN AND SPINAL CORD. J. RYLAND WHITAKER. Edinburgh: E. & S. Livingstone, 1911. 4th Edition. 5s. 6d. net.

THIS edition is a great advance on its predecessors, especially in regard to the illustrations, which are more numerous and of a better quality.

The book is clearly and pleasantly written, and the subject is well arranged. It is a short, systematic description, but owing to the order of the arrangement and the fact that directions for dissection are included, it may be used also as a practical guide.

Though it does not pretend to be exhaustive, it includes within its 214 pages descriptions of the membranes and vessels of the brain and cord, and deals with the microscopical structure in sufficient detail for the needs of the student, for whom the book is intended.

As is necessary in a new edition of any anatomical text-book, the Basel nomenclature has been included, and in connection with this new feature some trivial little errors of spelling have crept in, such as Foramina interventriculares, which will be corrected in subsequent editions.

E. B. JAMIESON.

BOOKS AND PAMPHLETS RECEIVED.

Aikins and Harrison. "The Present Status of Radium Therapy" (*Canadian Practit. and Review*).

Hertz. "The Sensibility of the Alimentary Canal." London: Frowde and Hodder & Stoughton, 1911. 5s. net.

Mach. "Die Analyse der Empfindungen und das Verhältnis des Physischen zum Psychischen." Jena: Gustav Fischer, 1911. M. 5, geb. 6.

Haymann. "Selbstanzeigen Geisteskranker." (*Juristisch-psychiatrische Grenzfragen*, Bd. vii., H. 8, 1911. Pr. M. 1.)

Wilhelm. "Beseitigung der Zeugungsfähigkeit und Körperverletzung de lege lata und de lege ferenda.—Die künstliche Zeugung beim Menschen und ihre Beziehungen zum Recht." (*Juristisch-psychiatrische Grenzfragen*, Bd. vii., H. 6 u. 7, 1911. Pr. M. 2.50.)

Kent County Lunatic Asylums. "Sixty-Fourth Annual Report for the year 1910."

King Edward VII. Sanatorium, Midhurst. "Fourth Annual Report." July 1909 to July 1910.

"La Revue Internationale de la Tuberculose," Vol. xx., No. 2, Août 1911.

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Original Articles

TABES DORSALIS AND MENTAL DISEASE.

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IN tabes dorsalis mental symptoms frequently develop; in the majority of such cases the mental symptoms are evidences of the onset of general paralysis. In a certain number of cases, however, the autopsy has shown that the cortical changes of general paralysis are absent, and therefore the psychosis has arisen on a different basis. In this communication the latter group is discussed—the group of tabetic psychosis not due to the process of general paralysis, for the sake of brevity called “non-paralytic” tabetic psychosis.

Whether these psychoses present a uniform clinical picture has been frequently discussed in French and German literature, but has received practically no attention in English literature. A probable explanation for this neglect may be that most of those cases of tabes developing a psychosis have been simply regarded as cases of general paralysis. It is a well-known fact

that practically every imaginable mental symptom-complex may occur in general paralysis, and therefore I believe that a distinct necessity exists for a more precise definition of the limits of general paralysis.

My purpose in presenting this paper is to emphasize the fact that psychoses are not infrequently met with in cases of tabes which are not paralytic in nature, and to call attention to the special characteristics of these psychoses.

Westphal in 1863 first described the occurrence of general paralysis and tabes dorsalis in the same patient, and soon tabo-paralysis came to be recognised as a well-defined sub-group of general paralysis. In most cases the tabetic symptoms preceded those of the cerebral process; in other cases the two diseases seemed to develop coincidently; and in a third, much smaller, group the tabetic signs developed after the onset of the general paralysis.

In the course of time, however, certain cases of mental disorder with tabes were observed which, in their onset, clinical type, and course did not show the characteristic picture of general paralysis; the question arose as to whether these psychoses had any characteristic features.

Bornstein (1) quotes Cassirer (2) and the majority of authors as believing that tabes dorsalis and general paralysis are essentially the same disease, and as considering that all mental disorders occurring in tabes are either due to general paralysis, or are simply casual complications which can be easily recognised as such. Bornstein reports the case of a tabetic presenting an acute hallucinatory condition with disorientation, but who showed no special defect of memory; such a condition is held by some to be the typical tabetic psychosis; he concludes, however, that although the mental disturbances in these cases cannot be looked upon merely as casual associations, the psychosis which occurs in tabetics is of too heterogeneous a nature to allow us to talk of a specifically tabetic psychosis.

Otto Meyer (3), in a very comprehensive article upon the subject of the non-paralytic psychoses accompanying tabes, has reported 140 cases, partly from the literature and partly personal. After eliminating 84 of these which he considered doubtful, he tabulated as follows the remaining 56, in which a paralytic process could be ruled out:

	Cases.
Chronic Hallucinatory Paranoia	21
Depressive Psychoses (Hypochondria, Melancholia) .	14
Circular Psychoses	4
Acute Hallucinatory Confusion	2
Manic Excitement	1
Secondary Dementia (after Paranoia)	3
Hallucinatory Paranoic Dementia (Kraepelin) . .	1
Simple Primary Dementia	3
Periodic Excited States	1
Hallucinatory Anxious States	3
Excitement in Imbecility	2
Dementia Præcox	1

Meyer remarks on the frequency of the first two groups, but concludes with Bornstein that, although non-paralytic psychoses occur in tabes, there is nothing characteristic about them.

Masoin (4) has reported the interesting case of a man who, three years after the onset of the physical signs of tabes, developed a mental disorder characterised by depression, attempts at suicide, marked fear, ideas of persecution, and probably by auditory hallucinations. His memory, orientation and ability to calculate remained intact during the three years of his hospital residence. Clinically, the mental disorder was held by the author to be typical of the tabetic psychoses. The histo-pathological examination revealed the changes of general paralysis. Such a case is of much value, as it shows how sometimes cases of general paralysis occur which clinically are held to be typical examples of the characteristic mental disorder seen in tabetics.

Kraepelin (5) takes a somewhat different view from the authors already quoted. He states that there occur, although not very frequently, well-marked cases of tabes with mental disorder which, in their clinical form as well as in their course and outcome, differ absolutely from cases of general paralysis. He considers that the casual complications, such as alcoholism, catatonia, manic-depressive insanity, etc., which sometimes occur in cases of tabes, can be easily recognised as such, and that we have a right to assume a psychosis peculiar to tabes. In outlining the symptomatology of this psychosis he says, "The essentially distinguishing feature of the tabetic psychosis appears

to be an acute hallucinatory excitement which frequently presents a marked resemblance to the hallucinatory insanity of the alcoholic. The patients suddenly become fearful, agitated, hear distinct voices, are accused of numerous crimes, lock themselves in their rooms lest they should be executed, their relatives torture them, they cry for help." In such cases the general intelligence, the memory, retention and orientation remain intact, and the speech and writing do not present the specific type of disorder seen in cases of general paralysis.

Other authors who believe in a special tabetic psychosis are Simon (quoted by Cassirer), Rühle (6), and Schultze (7), each of whom has reported two cases corresponding to the type outlined by Kraepelin.

As a contribution to this subject I wish to report and briefly discuss five cases of tabes with mental disorder which I have had the opportunity of observing. Two of these cases have come to autopsy.

CASE I.—An acute hallucinosis with fear and some transitory confusion developing in a man 49 years of age, who had tabes dorsalis for fifteen years. During his hospital residence transitory hallucinatory episodes with suspicion and irritability. Memory, orientation, speech and writing were intact.

P. D., 49 years, married, post-office clerk, was admitted to the clinical service of the Psychiatric Institute on May 12th, 1909.

Family History.—Negative for nervous and mental disease for two generations.

Personal History.—When a child the patient had an attack of scarlet fever, following which he became almost completely deaf in both ears. Otherwise he appears to have been a healthy boy and to have developed normally. He worked steadily for sixteen years as a post-office clerk, and latterly was earning \$75.00 per month. In 1894 he was accused of stealing, was tried and acquitted, but nevertheless was discharged from his position. In the same year (1894) he began to suffer from severe pains in his legs, had a burning sensation in his eyes and at times could not see, had headaches, a feeling of pressure on the top of his head, girdle sensation; he staggered when he walked, had imperfect sphincter control. From that time he was unable to work owing to his poor physical condition.

He gave a history of having acquired syphilis about 1878. He married in 1885; his wife had one miscarriage, and then had three healthy children.

Previous to the onset of the symptoms of locomotor ataxia the

patient had been moderately alcoholic, but afterwards was very temperate.

Onset of Psychosis.—The onset was apparently quite acute, as a lady who used to visit him at the City Home has stated that she saw him one week previous to his committment, and then he seemed quite well, conversed rationally, but at times looked around suspiciously.

In Bellevue Hospital.—He said: "I got a melancholy spell on me—I always was low-spirited. At times my memory is bad, my mind wanders; I don't know what I am doing or saying. I said my brother killed a man. I hear them say: 'Hang Pat,—hang Pat and his brother.'"

He was described in Bellevue Hospital as depressed and confused, and as imagining that those about him were accusing him of having murdered a man.

On Admission.—May 12th, 1909. The patient was quiet, appeared depressed, admitted that he felt a little sad, but replied promptly and relevantly to all questions. He complained spontaneously of having difficulty in remembering and connecting things, and said that he felt clouded. He denied that he was now hearing voices, but admitted having heard them when he was in the City Home. He stated that one day, just previous to his committment, when he was in the toilet-room, he heard a man say: "We'll hang D—— and his brother." On another occasion he heard someone say: "Pat killed him, we'll hang Pat." The voice was described as clear and distinct, and the patient has always absolutely denied that it was due to his imagination.

He was approximately correctly oriented for time and place. His memory for both recent and remote events was found to be very defective, as he denied ever being in Bellevue Hospital, did not remember travelling to this hospital in a boat, could not tell when he had come to New York, nor give the date of his marriage. He was unable to tell what the capital city of the United States was, could not give the name of the mayor of New York City, and in doing simple arithmetical calculations made several mistakes, *e.g.*, $7 \times 9 = 54$; $10 \times 12 = 122$. He said that he knew his mind was affected owing to his great difficulty in recalling things, and that it seemed as if he got into a worse plight the harder he thought.

Physical Status.—He was a well-nourished man, who complained of various subjective head sensations, heard a hissing noise like escaping steam, and had a feeling as if a clot of blood was in his head. He presented the typical physical signs of locomotor ataxia. His visual acuity was defective, both visual fields were concentrically contracted; both pupils were contracted, the left was smaller than the right, they were irregular, and showed the Argyll-Robertson phenomenon; optic discs normal. The tendon reflexes of both the upper and lower extremities were absent, and he had imperfect control of his sphincters. The muscles of the legs were atrophied, muscular power was correspondingly lessened, and he could not stand nor walk without support; when supported his gait was typically tabetic. There was marked hypotonia. He had a marked dulling of tactile and pain sense on the ulnar side of both forearms, and also from the knees down to the toes.

In addition to the above physical signs it was noted that the left side of his face was flattened, and did not move so freely as the right side; the tongue showed a tendency to be protruded to the left. No defect was noticed in his spontaneous speech, but he slightly distorted difficult test words; his writing was untidy and showed omission of letters. Tremor of tongue and outstretched hands. No tremor of facial muscles.

Further Course.—For about three weeks the patient continued to be rather dull and depressed, complained of not being able to think clearly, said that his head felt heavy and that there was a drumming noise going on in it. He did not show any evidence of hallucinations. He gradually became clearer and more cheerful, conversed readily when spoken to, and was able to give a very good account of his life and sickness without any marked discrepancies being elicited in his dates. His grasp on general information, his ability to calculate, and his power of retaining recent impressions also showed a marked improvement. His speech and writing improved, so that by July 21st, 1909, no defect was noticed in either except slight hesitation in pronouncing difficult test-words.

On September 18th, 1909, however, a change occurred in his condition. He became suspicious and irritable, accused the other patients of staring at him and of watching him, and said that he thought he heard one of them say "Hang him." He complained of having outrageous thoughts which prevented him from keeping his attention on anything which he happened to be reading, and also prevented him from sleeping at nights.

On October 17th, 1909, he was very suspicious and irritable, and said that the same talk was going on about him which he had heard in the City Home. He complained of hearing such remarks as: "We'll hang him"; "Pat ruined both the brothers," etc. He also said that vile insinuations were being made about him, namely, that he had had sexual relations with his mother, sisters, and other relatives. He said: "What I am suffering, doctor, amounts to a persecution, and nothing short of it. I know my mental condition is not right, but as soon as I get a grip of Christian Science I will be all right again."

On October 18th examination of cerebro-spinal fluid showed 40 lymphocytes per field with oil immersion lens, positive globulin reactions, and positive Wassermann (Noguchi) reaction with blood serum and spinal fluid.

December 9th, 1909, in a letter addressed to the Christian Science Church asking for treatment, he said: "I am afflicted with locomotor ataxia and also my mind is not right, whilst I am not insane my mind is not normal. In my distress I make this appeal to you for relief from a delusion I am suffering from; I have a running thought about my mother relative to having a criminal connection which is not true. It has placed me in a very unenviable light before the doctors and the other patients."

Since that time up until the present his condition has remained absolutely stationary. From time to time he has little episodes of

irritability and suspicion, during which he will accuse the other patients and attendants of watching him, and of making remarks about him.

Ever since July 21st, 1909, however, he has been alert and has remained correctly oriented. His memory both for recent and remote events, his retention, grasp on general information, and calculation have all remained intact.

Physically, his condition has shown practically no change from that already noted except that he has now a well-marked tremor, especially of his right arm.

He complains from time to time of pains in his legs, of various paræsthesias, and also of severe pain in the præcordial region. He has now no speech defect. His writing shows a marked tremor but no distortion of words.

CASE II: An acute hallucinosis with fear and suspicion developing in a man 57 years of age who has had tabes dorsalis for eighteen years. During his hospital residence subsidence of the hallucinosis so that he is at present in a quiescent condition. His memory and orientation, speech and writing have remained unimpaired during the whole period of the attack.

H. R., 57 years, clerk, married, was admitted to the clinical service of the Psychiatric Institute on April 21st, 1911.

Family History.—Negative for two generations for nervous or mental disease.

Personal History.—The patient was born in July 1853, in New York City. He was rather a sickly child, but developed normally. He received a fair common school education. He has worked principally as a clerk in lodging-houses, etc.

He married in 1877, and for the second time in 1894. He has had no children. He gives a history of having contracted syphilis about 1887; he had a chancre, and suffered from severe headaches.

In 1893, following a fall, his right knee-joint became disorganised, and he was told that he had locomotor ataxia. Since the time of his second marriage in 1894 he has been supported by his wife. Since then his wife states that he has been unable to get about except on crutches, that he used to suffer intense pains in his legs, had indigestion and constipation, incontinence of urine, and was impotent. He has been moderately alcoholic.

For the last two years he has been taking a prescription containing codeine, gr. 1/4, and morphine sulphate, gr. 1/6 to a dose. He took this medicine almost every morning, and also at night, sometimes once and sometimes twice. This medicine never seemed to exert any bad effect on him.

Onset of Psychosis.—In January 1911 he suddenly developed the idea that all his neighbours were conspiring against him; his ideas were particularly directed against an Italian and his cousin. Later he

accused his wife of being against him, would watch her, and threatened to go away and leave her. He would cover his head with paper as he thought people were trying to photograph him, heard people talking about him, and accusing him of doing all sorts of bad things, *e.g.* of poisoning the doctor's horse. At nights he would waken his wife as he said that he heard people conspiring against him. He never seemed to have visual hallucinations, but once said that people were putting sticks through the wall of his house. His memory and speech were never noticed to be defective.

On Admission.—April 21st, 1911. He was depressed, cried at times throughout the examination, seemed apprehensive and reacted to auditory hallucinations. He answered questions promptly and relevantly; there was no disorder in his spontaneous speech. A short sample of his talk was as follows: "Two or three months ago it started in; I won't tell it because nobody will believe me; they won't listen to me, to what I know to be facts. I have no witnesses, only myself, so that the best thing to do is to let it rest. He is up there now, and he will put me out of the window. A job has been put up on me, I know nothing further about it. God knows if I could only make people see and understand things, see and know what I know to be a fact."

He said that he heard his cousin talking to him from upstairs, heard himself called a thief and a firebug, said that he was going to be got rid of, etc. His persecutors had holes in the walls through which they could watch him, but he denied that he had ever seen them. He gave the date and the name of the hospital correctly. He was able to give an excellent detailed account of his life without discrepancies being elicited in his dates; his memory for recent events was also quite good. He had a good grasp on general information, did simple calculations for the most part correctly, and had good power of retention for recent impressions.

He stated that his mind had been temporarily upset, but that he was now quite well again.

Physical Status.—A rather poorly-nourished man who complained of a numb feeling, as if his legs were wrapped in silk, from his knees to his feet. At nights his feet felt numb, and when he walked the floor felt soft under them. There was resorption of the alveolar margin of the upper jaw. There was slight contraction of the visual fields; the pupils were unequal, left more dilated than right, both were irregular, reacted slowly but with fair excursion both to light and on accommodation; optic discs were normal.

His hearing was defective on both sides, as he only heard a watch when in apposition with the ear.

The muscles generally throughout the body were atrophied. Both the wrists, and the fingers at the metacarpo-phalangeal joints, were excessively mobile. The toes were extended at the metatarso-phalangeal joints, and both feet showed a slight degree of pes cavus.

The right knee joint was disorganised, flail-like, painless (Charcot joint). There was some hypotonia of the lower extremities. He could not stand or walk without support.

A sensory examination showed a marked general dulling to tactile and pain sense, but this dulling was more marked over the ulnar sides of both forearms, and from the knees down to the feet. The joint sense of feet and hands was slightly defective and there was slight astereognosis.

All tendon reflexes were abolished both in the upper and lower limbs; he had imperfect vesical control.

Speech showed no defect. Writing showed tremor but no distortion. There was no tremor of facial muscles.

Further Course.—On April 20th, 1911, the examination of the cerebro-spinal fluid showed two cells per c.mm. Globulin tests were negative, Wassermann (Noguchi) reaction slightly positive with blood serum, negative with cerebro-spinal fluid.

On May 2nd, 1911, he was still apprehensive, and still reacted to auditory hallucinations. He said: "Last night I heard them talking and getting that thing ready to toss you out on—I heard a fellow telephone people here all night; they can see down and I hear them talking of being down—I know they are on the other side of that wall (says to physician: 'Don't you hear them?'). They claim I've raised the devil, stole, exposed myself to a woman and a child, that I'm batty and a liar."

On May 5th his apprehensive attitude continued. He would frequently stop the physician, and tell him that this was going to be his last night as he was going to be killed. He said: "They called me a stinker, and there was a lot of smutty stuff about poultry. The Italian blames me. They have it in for me; you are the only friend I've got (starts to cry); by God, what have I done to deserve this!"

He stated that he had never seen the Italian, his cousin, or any of the gang here, but that he knew their voices. At nights the voices would always get more accusing, he heard them in both ears, and they seemed to come from the ceiling or the next room.

His orientation, memory, grasp, and ability to calculate were all intact.

In May the auditory hallucinations disappeared, and his apprehensiveness diminished. He is at present in a quiet, almost normal condition. His physical condition has remained unchanged.

These two cases may be briefly considered together, as they resemble each other very closely, and are good examples of that type of mental disorder which is held by some to be peculiar to tabes dorsalis.

It is interesting to note that both these patients, 49 and 57 years respectively, were rather beyond the age at which general paralysis usually develops; in each case the tabes had been over fifteen years in duration. Moreover, it is extremely rare to find general paralysis developing in cases of tabes of such long standing as the two just reported.

Dejerine and Thomas have made the statement that the longer the tabes, the less likely is the patient to develop general paralysis.

In both these cases the mental disorder was characterised by an acute hallucinosis with fear resembling very closely the acute hallucinosis seen in cases of chronic alcoholism. In Case I. the hallucinosis was complicated by a transitory period of confusion, during which the patient had difficulty in giving exact dates, showed some hesitation in his speech, and made mistakes in writing.

In Case II. the only complicating factor we need consider is the possible influence of the morphine which he had been taking as an exciting etiological factor. Mental disorders due to drugs have, according to Dr August Hoch, a fairly characteristic symptomatology. The patients are dull, drowsy, frequently delirious, talk in a confused paraphasic way, are apt to be completely disoriented, and have a very poor memory for recent events. The picture presented by our patient was an entirely different one; he has all along been bright, correctly oriented for time and place, able to give an excellent account of his life and sickness, and furthermore has shown none of the abstinence symptoms usually so prominent in drug habitues. It cannot, of course, be definitely said that the drug has not exerted some influence on the development of the psychosis, but it certainly does not seem to have been the prime factor.

The striking features in both cases which distinguish the clinical picture from that of general paralysis are, the sudden onset, the type of the mental disorder, the lack of progression, the intactness of speech and writing, and the absence of facial tremor. These facts, I think, are sufficiently conclusive to allow us to say that these are not cases of general paralysis; they are cases which closely correspond to the type of case described by Kraepelin as typical of the non-paralytic psychosis occurring in cases of tabes dorsalis.

CASE III.—A depression with an attempt at suicide, developing in a man 48 years old, five months after the onset of tabes dorsalis. No defect in his general intellectual functions, and no disorder of speech.

J. P., 48 years, married, mason, was admitted to the clinical service of the Psychiatric Institute on March 3rd, 1911.

Family History.—Negative for two generations for nervous or mental disease.

Personal History.—The patient was born in Italy in 1862. He was a strong, healthy boy, developed normally, and was educated for the priesthood. He, however, left the Seminary in 1887 to get married, and came to America in 1890. Since coming to America he has worked principally as a mason, earning \$20 per week.

He has married twice; his first wife had one miscarriage, and two children, who died shortly after birth; his second wife has had three miscarriages, and one healthy child who is now five years old.

He admits syphilitic infection, but cannot specify the exact date; he had a chancre and skin rash, for which he received treatment for a short time. He was always temperate in the use of alcohol.

Onset of Sickness and Psychosis.—About one year previous to admission he had to give up his usual work on account of severe pain in his back. In November 1910 he was sent to the Metropolitan Hospital because of severe pains in his back and legs, and was there diagnosed as a case of locomotor ataxia. For several months previous to his admission here his eyesight had been gradually failing.

While in the Metropolitan Hospital he became depressed and made a determined attempt at suicide by cutting his throat. He was shortly afterwards committed.

On Admission.—March 3rd, 1911. He was quiet, natural in his manner, answered questions promptly and relevantly, and told of his attempt at suicide on account of depression due to his poor physical condition. He was able to give a good account of the onset of his sickness. He did not express any absurd or grandiose ideas, and denied ever having had any hallucinations. He realised that he was in a hospital, and gave the date approximately correctly.

He was able to give a good account of both remote and recent events in his life without any discrepancies being elicited in his dates. His grasp on general information, his calculation, and his power of retention were all fairly good. He had some realisation of his condition.

Physical Status.—A fairly well-nourished man who complained of a feeling of general weakness.

His sense of smell was impaired, as he could not smell any of the ordinary test solutions, *e.g.* camphor, peppermint, cloves, on either side. He was totally blind, due to a double optic atrophy.

The muscles of the right arm and of both legs were flabby, but the muscles of the left arm were in fairly good condition. He stated that he was a right-handed man, but all the movements of the right arm against resistance were much more weakly carried out than those by the left arm; the right hand grip was weaker than the left.

He could not stand without support, and when supported his legs were hyper-extended at the knees.

No disorder of touch, pain or tactile sense could be elicited.

None of the tendon reflexes could be elicited on either side of the body.

There was some hypotonia, and ataxia of the lower extremities.

The examination of the cerebro-spinal fluid showed a very small cell count of six cells per c.mm. ; butyric acid and ammonium sulphate ; tests for globulin were positive ; Wassermann (Neguchi) reaction was negative both with the blood serum and cerebro-spinal fluid.

There was no disorder of speech, even with test words. No tremor of facial muscles.

Further Course.—During his hospital residence he has behaved in a quiet, orderly way, has been somewhat depressed, but has shown no abnormalities of conduct. He remains correctly oriented, his memory is good both for remote and recent events, his grasp on general information, calculation, and power of retention remain practically unimpaired. He still has a fair appreciation of his condition.

Physically.—The patient complains occasionally of a tight sensation round his body, and of pains in his legs. He has imperfect control of his bladder, and has had to be catheterised on several occasions.

His right hand and arm are still weaker than the left, and the stereognostic and the joint sense of right hand are impaired. Otherwise his physical condition remains unchanged.

CASE IV.—A depression with an attempt at suicide developing in a man 35 years of age, who probably for about one year previously had had tabes dorsalis. During his hospital residence, extending over a period of twelve years, he continued to be depressed, irritable, and at times apprehensive.

The histo-pathological examination did not reveal any general paralytic changes.

J. D., 35 years, married, labourer, was admitted to Manhattan State Hospital on July 15th, 1898.

No anamnesis was obtained in this case.

Personal History.—He was born in Naples in 1863. He served in the Italian Army for three years, from the age of twenty-one to twenty-four. Shortly after leaving the army he married. He came to America, when thirty-four years old, in 1897.

He had been moderate in the use of alcohol. He gave a history of both gonorrhœa and syphilis. He was about twenty-four years old when he had his syphilitic infection, and was in the army at the time ; he had a chancre, skin rash, headache, was sick for thirty days, and was treated by an army doctor.

Onset of Psychosis.—The history of the development of the case was extremely meagre, owing to the fact that no anamnesis could be obtained, that the patient's statements were probably unreliable, and that he did not co-operate very satisfactorily in the examination. He stated that before he left Naples his legs had felt weak, but that he had been able to work up until the time he came to America. When he arrived in America he felt weak generally, and

was unable to work ; shortly after his arrival the eye palsies which he exhibited gradually developed, and he started to suffer from pains in his legs. He consequently became depressed on account of his physical condition, and, after making an attempt to commit suicide by stabbing, he was committed.

On Admission.—July 15th, 1898. He was described as dull and depressed, and at times became excited. He was very ataxic, his tendon reflexes were absent.

Later he is noted as having had a marked suicidal tendency, he stated himself that he did not want to die but that he could not control himself.

Further Course.—Up until April 1899 he is noted as being quiet, contented, well-behaved, and able to get about on crutches. He complained occasionally of pains in his legs. At that time, however, he again became more depressed, duller, and started to wet and soil himself.

On February 20th, 1903, he was noted as emotional and at times apprehensive. He complained of abdominal pain ; there was marked wasting of the extensor muscles of the feet and toes.

On February 24th, 1903, his eyes were examined by Dr Adams, the visiting ophthalmologist, who made the following report: "Total paralysis of the right 6th nerve and total paralysis of the left 3rd nerve. Optic nerves of both eyes normal."

In April 1906 the patient was transferred to the clinical service of the Psychiatric Institute.

An examination at that time showed the absence of all tendon reflexes on both sides ; cremasteric and abdominal reflexes not elicited on either side, epigastric reflexes present on both sides ; plantar response flexion on both sides ; marked general wasting of the muscles throughout the body, but especial atrophy of flexor and extensor muscles of legs, feet in equinus position, toes contracted.

He appeared to have a fair grasp on the environment, and had some realisation of his poor physical condition. No abnormal trend could be demonstrated.

His memory seemed fair, and no definite date discrepancies could be elicited.

In May 1906 a sensory examination showed impairment of touch, pain and thermal sense over both lower extremities, and also defective power of localisation. His stereognostic sense was deficient on both sides ; marked ataxia of both upper and lower extremities. An examination of his cerebro-spinal fluid showed a pleocytosis and positive globulin reactions.

From then up until the time of his death he was practically inaccessible for examination, but on June 30th, 1910, was noted as still realising that he was in a hospital.

He died on December 22nd, 1910, after twelve years' residence in the hospital.

The histo-pathological examination of the brain did not show any of the changes associated with general paralysis.

Although, as has been stated, an acute hallucinatory disturbance seems to be the most typical form of the mental disorder which is apt to accompany cases of tabes, depressed states are not uncommon, and are only slightly less frequent. In Meyer's series of fifty-six cases depressed states were second in point of frequency. Kraepelin also draws attention to the prominence of depression in these cases, and says: "Many patients are sad, take a hopeless view of things, are filled with depressing thoughts and fears."

These two cases present a mental picture quite different from the hallucinatory condition exemplified by the first two cases. Exactly what the relation of such a depression is to the underlying neurological disorder is, of course, not easy to determine. In view, however, of the frequency of such a mental disorder in tabes it is probable that the connection is very close. Surely we have as much right to assume that the mental disorder in tabetics may have several clinical types, just as we see different clinical types in general paralysis and alcoholism.

Both of these cases are extremely interesting from that point of view. We have nothing clinically in Case III. to suggest a diagnosis of general paralysis, as mentally his intellectual functions are very well retained, and he has a fair realisation of his condition, while physically there is no disorder of speech and no facial tremor. Case IV. is especially interesting, as there we have a case of tabes dorsalis whose mental disorder was characterised by a depression of over twelve years' duration, and the histo-pathological examination of whose brain failed to show any of the changes which are now recognised to be pathognomonic of general paralysis.

CASE V.—A depression with somewhat fantastical delusional trend in a man, 57 years old, who had had tabes for eighteen years. His memory and other intellectual functions were intact, and there was no disorder in his speech.

The histo-pathological examination of the brain did not show any of the changes of general paralysis.

A. B., 57 years, single, hack-driver, was admitted to the clinical service of the Psychiatric Institute on February 17th, 1910.

Family History.—Negative for two generations in regard to nervous or mental trouble.

Personal History.—The patient was a strong, healthy boy, and developed normally. He received a common school education. He worked principally as a hack-driver, earning from \$25 to \$30 per week.

He himself gave a history of having contracted syphilis in 1877, for which he received a few days' treatment by quacks.

In 1892 his eyesight began to gradually fail; he visited several hospitals on account of his eyesight, was told that his optic nerves were paralysed, and that nothing could be done for him. In August 1909 he was taken to the City Home on account of his weak condition, and remained there up until the time of his commitment to the hospital.

He had been rather excessive in the use of alcohol.

Onset of Psychosis.—We were unable to obtain any definite information in regard to the onset, which was apparently acute.

In Bellevue Hospital.—He said: "My mouth and throat are all full of worms—they choke me to death. These rattle-snakes go in there (throat) and feed on my tonsils. When they get full they lay across my throat and choke me. They feed on my flesh and blood."

He is described as restless, ground his teeth, expectorated, claimed that he picked imaginary worms out of his mouth, and held them up in his fingers.

On Admission.—February 17th, 1910. He lay quietly in bed, was depressed, said that he did not care whether he died or not. He kept continually spitting, as he said his mouth was full of vermin, and that that was the only way in which he could get rid of them. He constantly ground his teeth, because he said that he wanted to squeeze the life out of them, and from time to time opened his mouth and asked the physician if he did not see any of them. A short example of his spontaneous speech was as follows: "I have got some reptiles in my throat that choke me at night. They get inside my gums, try to force their way out, and I am the sufferer; they are worms, and are eating my tonsils up." At another time he said that if he caught hold of one it eluded him by splitting, and that if he drank warm water he could hear them squeal.

He gave the date and the name of the place correctly. He was able to give an accurate detailed account of his life, and of more recent events. He had a good grasp on current topics, did simple calculations correctly, and his power of retention of recent impressions was good. He fully realised his generally weakened condition, but denied that his ideas were in any way foolish.

Physical Status.—He was a rather poorly-nourished man with pulmonary tuberculosis, and presented the typical signs of tabes dorsalis; he was totally blind (double optic atrophy), both pupils were irregular; tendon reflexes were absent on both sides; unable to stand or walk without support; some hypotonia of the lower extremities; marked dulling of tactile sense from the toes up to the knee on the right side, and from the toes up to the middle of the leg on the left side; general diminution of pain sense.

In addition to marked general wasting, and flabbiness of the muscles

throughout the body, especial wasting was noticed in the intrinsic hand muscles—interossei muscles of the thenar and hypothenar eminences—on both sides. The wasting was more marked on the left side, where the hand showed a typical *main en griffe*. No fibrillary twitchings were noticed. His speech showed no defect either in spontaneous speech or over difficult test words.

Further Course.—During his hospital residence he continued to be depressed, and continued to express the same peculiar ideas.

The examination of his cerebro-spinal fluid showed over a hundred cells per c.mm., and the butyric acid and ammonium sulphate tests for globulin were both positive. An electrical examination of the hand muscles showed a partial reaction of degeneration.

He died on March 7th, 1910.

The histo-pathological examination of the brain did not show any of the changes associated with general paralysis.

In this case, as in the two first cases reported, the mental disturbance occurred in a patient who had had signs of *tabes dorsalis* for eighteen years. The case is of considerable interest from a clinical point of view. The psychosis was sudden in onset, but was rather different in its form from that occurring in the other cases. Just as in the other cases, however, his intellectual functions were well retained, there was no speech defect and no facial tremor. It is of considerable danger in such a case as this to speculate in regard to the origin of his rather fantastic ideas about having vermin in his throat. Bornstein has suggested that the hallucinations of tabetics are largely dependent upon their sensory disorders. Following that suggestion, since no objective disorder could be made out, it seems feasible to suggest that this patient's delusional trend may have developed on the basis of some throat paræsthesia. Furthermore, the fact that he thought he sometimes had hold of the vermin may have been due to tactile hallucinations.

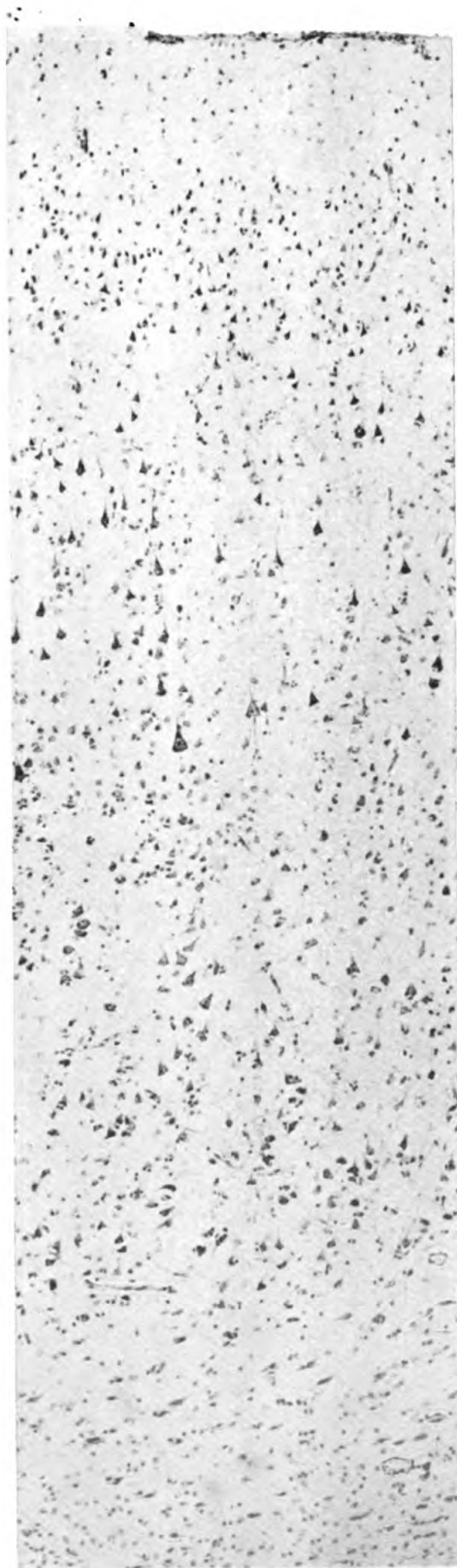
To sum up the results of the examination of the five cases here reported :

1. This communication contains the report of five cases of *tabes* with mental disorder in which there was no evidence of the presence of general paralysis; in two cases the diagnosis was confirmed post-mortem.

2. Two of these cases presented a hallucinatory condition corresponding with that clinical picture described by other authors as characteristic of the tabetic psychosis; in these two cases there has been no autopsy.

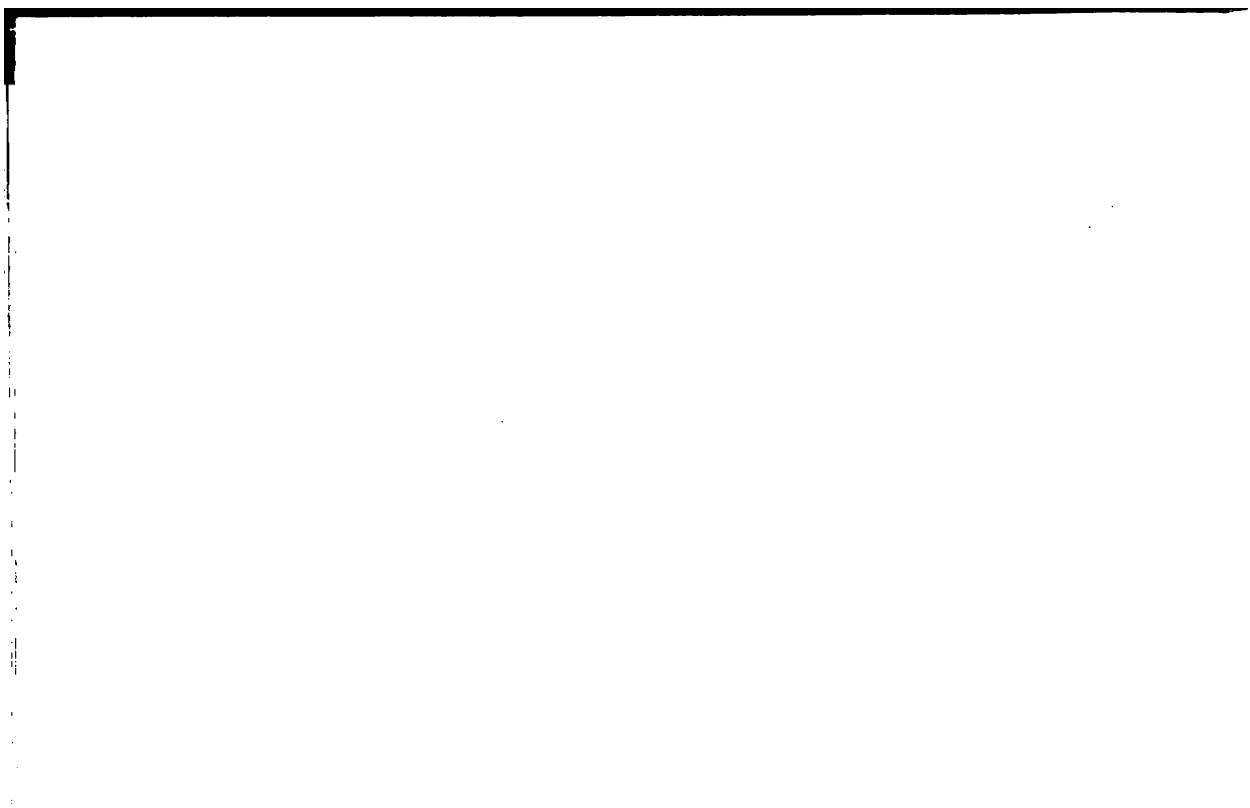


CASE IV.



CASE V.

To illustrate Paper by Dr Henderson.



3. Two of the cases presented a well-marked depression ; one with autopsy.

This type of disorder has also been described as frequently occurring in tabes.

4. One case presented a pronounced hypochondriacal depression ; the autopsy confirmed the diagnosis of tabes unaccompanied by general paralysis.

5. The features which specially distinguish these cases from cases of general paralysis are the absence of any memory defect, and on the physical side the absence of any speech or writing defect and of facial tremor.

REFERENCES.

1. M. Bornstein. "Tabes Dorsalis und Psychose," *Monat. f. Psych. u. Neur.*, Bd. 17, Ergänzungsheft, 1905.
2. Cassirer. "Tabes und Psychose : Eine klinische Studie." Berlin, 1903.
3. Otto Meyer. "Beitrag zur Kenntnis der nichtparalytischen Psychosen bei Tabes Dorsalis," *Monat. f. Psych. u. Neur.*, 1903.
4. Masoin. "Psychose Tabétique," *Bull. de la Soc. de Med. Ment. de Belgique*, 1908.
5. Kraepelin. *Psychiatrie*.
6. Rühle. "Nichtparalytische Geistesstörung neben Tabes," *Allgem. Ztsch. f. Psychiatrie*, 1903.
7. E. Schultze. "Ueber Psychosen bei Tabes," *Münch. Med. Wochenschr.*, 1903, p. 2131.
8. August Hoch. "A Study of Some Cases of Delirium produced by Drugs," *Review of Neur. and Psych.*, Feb. 1906.

DESCRIPTION OF PLATES.

Photographs of the cortex from the frontal region of Cases IV. and V.
Note the essentially normal character of the cortex in each case.

HEREDITARY FACTORS IN EPILEPTICS.¹

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MEDICINE has made gigantic strides during the last thirty years, yet idiopathic epilepsy remains incurable. Parents, boards of education, guardians of the poor are always hoping for the best as, some cases improve so greatly under treatment. Fits cease for long periods, and the question arises sooner or later, "May the patient now return to ordinary life under modern conditions?" The answer of the conscientious physician must be in the negative, and that for the following reasons:—

1. Even total cessation of fits for a period of five years does not imply that the patient is cured. Dr Aldren Turner tells us that he dares speak of the disease being *arrested*, if there has been no fit for *nine* years.

2. Epileptics, although the fits may have been arrested, should never be allowed to marry, as they are usually prolific, and their offspring apt to be either mentally deficient, epileptic, or both.

I have lately had the opportunity of examining fairly completely the family history of 154 epileptic children, and the information gained is, I think, of some interest. The family history has especially been examined with a view of gaining information as to the existence of neuropathic tendencies, grouped under five different headings:—

1. Epilepsy (including convulsions).
2. Alcohol.
3. Insanity.
4. Phthisis.
5. Other nervous diseases (*e.g.* hysteria, paralysis, meningitis).

Syphilis and cancer were also at first included, but I found so few cases that they are hardly worth considering. As regards

¹ "Epilepsy," by Aldren Turner, M.D. A Study of the Idiopathic Disease, pages 2-4.

the absence of syphilitic taint, this is specially interesting as being in opposition to the widespread popular belief that epilepsy is directly caused by this taint in one or other of the parents.

Out of the total 154 cases, the family history of 20 patients (12·98 per cent.) was healthy, and in 27 cases (17·52 per cent.) it was unknown, leaving 107 cases (69·48 per cent.) showing one or more of the five morbid taints.

HEREDITY IN EPILEPTICS

No.	CASE	TYPE	SEX	EPILEPSY OR CONVULSIONS	ALCOHOL	INSANITY	OTHER NERVOUS DISEASES	PHTHISIS
1	F. A.	..	F	..	..	Brother (Grandmother, Paternal Uncle, Paternal Sister	..	Mother ..
2	L. M. A.	..	F	..	..	Uncle	Brother (meningitis)	..
3	G. A.	..	F	Two Sisters	..	..	..	..
4	F. A.	..	F	Sister	..	..	..	Mother, .. Grand- mother
5	D. W. A.	..	M	Cousin, Brother	..	..	Father (chorea)	Mother, .. Grand- mother
6	T. B.	..	M	..	..	..	..	..
7	C. B.	..	M	..	..	..	..	..
8	D. B.	..	F	..	..	..	..	..
9	W. B.	..	M	Paternal .. Grand- father	Father ..	..	Mother (hysteria)	..
10	W. V. B.	..	M	..	..	..	..	..
11	A. B.	..	F	Family	history unknown:	both parents dead	..	..
12	H. B.	..	M	..	..	Paternal .. Grand- father	..	..
13	S. B.	..	M	Father	..	..	..	..
14	J. B.	..	M	Father	..	..	..	..
15	E. B.	..	F	Father	..	..	Brother (chorea)	..
16	E. B.	..	M	..	..	..	Brother (meningitis)	Paternal .. Grand- mother
17	J. B.	..	M	..	..	..	..	..
18	D. B.	..	F	..	..	..	..	..
19	H. B.	..	M	..	family history	..	..	..

20	A. B.	..	M	..	Father	Maternal Grand- parents, Father and Mother
21	H. B.	..	M	Father	..	..	Sister (tubercular spine)
22	A. B.	..	M	Brother (C)	..	..	Brother, Cousins
23	S. B.	..	F	..	..	..	Maternal Grand- mother
24	G. B.	..	M	..	Father	..	..
25	M. B.	..	F	Aunt and Sister	..	..	Mother (paralysis)
26	E. B.	..	M	..	..	..	Paternal Aunt (chorea)
27	C. B.	..	M	..	..	..	Paternal Grand- mother (paralysis)
28	B. C.	..	F	..	..	..	Maternal Grand- mother
29	A. C.	..	M	Brother (C)	..	..	Uncle (M)
30	R. C.	..	F	..	..	..	..
31	C. C.	..	M	Three Brothers	..	Step-Sister	Mother (hysteria)	
32	C. C.	..	M	..	..	Great-Aunt	..
33	R. C.	..	M	..	..	..	..
34	M. C.	..	F	..	Father	..	Father	
35	C. C.	..	M	Uncle, Brother (C)	..	..	..
36	F. C.	..	M	..	..	..	..
37	L. C.	..	M	.. Healthy	family history	..	..
38	H. C.	..	M	..	..	..	..
39	O. C.	..	F	..	..	..	..
40	T. C.	..	M	.. Healthy	family history	..	..
41	H. D.	..	M	.. Healthy	family history	..	..
42	R. D.	..	F	Two Brothers (C)	..	..	..
43	A. D.	..	M	.. Healthy	family history	..	..
44	F. D.	..	M	Uncle (M)	..	..	..
45	A. D.	..	F	..	Father	..	..
46	A. D.	..	M	Grandfather (P)	..	..	..
47	H. E.	..	M	Parents	dead	Mother	..	
48	A. E.	..	M	..	..	..	Father, Sister

No.	Case	Type	Sex	Epilepsy or Convulsions	Alcohol	Insanity	Other Nervous Diseases	Phthisis
49	E. E.	..	M	..	..	..	..	Brother ..
50	J. E.	..	M	Sister (C) Healthy	..	..	..	..
51	R. E.	..	M	..	family history	..	..	..
52	E. F.	..	F	Sister	..	..	..	..
53	M. F.	..	F	..	..	..	..	..
54	F. F.	..	M	Father	..	..	..	..
55	E. F.	..	F	Father	..	..	..	..
56	H. F.	..	M	Father, Mother	..	Great-Aunt (P)	..	Uncle (P)
57	L. F.	..	F	..	..	..	..	Three children (wasting disease)
58	L. F.	..	F	..	Grandfather (M)	..	..	..
59	W. F.	..	M	..	..	..	Grandmother (M) (cancer of liver)	..
60	R. F.	..	M	..	..	..	..	..
61	A. F.	..	M	..	..	Brother, Grand- parent (P) ;	..	Grandfather (P), Father, Two Sisters, Uncle (P) Father
62	E. G.	..	M	Aunt (M)	..	..	..	..
63	E. G.	..	F	Healthy	family history	..	Mother (cancer)	..
64	F. G.	..	F	Healthy	family history	..	..	..
65	A. G.	..	M	..	..	Grandfather (P) Father	Mother (chorea)	..
66	A. G.	..	M	Brother	..	..	..	..
67	S. G.	..	M	..	..	..	..	..
68	W. G.	..	M	Uncle	..	..	..	Mother
69	J. H.	..	M	..	Father	..	..	..
70	M. H.	..	F	..	..	..	..	..
71	J. H.	..	F	..	..	..	..	..
72	J. H.	..	M	Father, Sister	..	..	..	..
73	T. H.	..	M	..	..	..	Grandfather (P) (tumour on the brain)	..
74	L. H.	..	M	Uncle (P)	family history	Mother (cancer)	..	..
75	D. H.	..	M	Healthy	..	..	..	..

76	D. H.	..	F	Two Brothers	..	..	Father	..	Father
77	S. H.	..	M	..	..	..	Grandfather (P)	..	..
78	W. H.	..	M	..	..	..	..	..	..
79	M. H.	..	F	Uncle (P)	..	..	..	..	..
80	F. L.	..	F	Healthy,	..	..	..	..	..
81	A. T.	..	..	..	but dull mentally	..	..	..	..
82	A. J.	..	M	..	..	..	..	..	..
83	E. J.	..	F	Healthy	..	..	..	..	..
84	H. H.	..	M	Mother	..	..	..	..	..
85	C. K.	..	M	Healthy	..	..	..	..	..
86	A. L.	..	M	Grandfather	..	..	..	..	..
87	A. L.	..	M	Grandfather, Grandmother (P)	..	..	..	..	..
88	C. L.	..	M	..	..	..	..	..	..
89	W. L.	..	M	Four children (C)	..	..	..	..	..
90	F. L.	..	M	Grandparent (P)	..	..	..	..	..
91	J. L.	..	M	..	..	..	..	..	..
92	R. L.	..	M	..	..	..	..	..	..
93	A. L.	..	M	..	..	..	..	..	..
94	S. L.	..	M	..	..	..	..	..	..
95	S. L.	..	M	..	..	..	..	..	..
96	B. L.	..	F	Brother	..	..	..	..	..
97	..	..	..	..	..	..	..	..	..
98	E. M.	..	M	Brother	..	..	..	..	..
99	F. M.	..	F	Illegitimate	..	..	..	..	..
100	H. M.	..	M	..	..	..	..	..	..
101	E. M.	..	M	Mother, Grandmother (M)	..	..	..	..	..
102	J. M.	..	M	Grandmother (M)	..	..	..	..	..

No.	CASE	TYPE	SEX	EPILEPSY OR CONVULSIONS	ALCOHOL	INSANITY	OTHER NERVOUS DISEASES	PHTHISIS
103	L. M.	..	M	..	Father dead	Aunt (P)	..	..
104	S. M.	..	M	Brother	..	..	..	Father, Brother, Grandfather (P)
105	J. M.	..	M	Mother, Uncle (M)	..	..	..	Mother and Brother (lumbar abscess)
106	G. M.	..	M	..	Grandfather (P), Two Uncles (P)	..	..	..
107	F. M.	..	M	..	history healthy	Great-Uncle	..	..
108	F. N.	..	M	Family	..	..	..	Grandmother (P)
109	A. N.	..	M	..	..	..	..	..
110	W. N.	..	M	Brother (C)	..	..	..	..
111	E. N.	..	F	Both	..	unknown	..	..
112	A. O.	..	M	..	parents dead: cause	..	..	Mother
113	A. P.	..	M	Illegitimate	..	..	..	..
114	H. P.	..	M	..	..	..	..	..
115	H. W. P.	..	M	..	..	..	..	Two Aunts (M), Father, Mother?
116	C. P.	..	F	..	..	..	..	Mother (hysteria)
117	S. P.	..	M	..	..	..	..	Grandfather (P)
118	E. P.	..	F	..	..	..	..	Grandmother (P)
119	C. P.	..	..	..	..	..	..	..
120	G. P.	..	M	..	..	..	..	..
121	G. R.	..	F	Family	history healthy	..	..	..
122	E. D. R.	..	M	Brother (C), Sister (C)	..	..	..	..
123	A. R.	..	F	..	..	..	..	Aunt (M)
124	M. R.	..	F	..	..	..	..	..
125	A. R.	..	F	..	..	..	..	..
126	T. R.	..	M	Father	Father	Uncle (P)	Father (paralysis)	..
127	M. S.	..	F	Aunt (P), Mother	..	..	..	..
128	F. S.	..	M	..	..	..	..	Aunt (M), Uncle
129	M. S.	..	F	..	history healthy	..	..	(M) Father

	A. S.		M						Grandfather (M), Grandmother (M), Brother
130	A. S.	..	M	..	..	..	..	..	..
131	W. S.	..	M	Brother, Sister	..	..	..	..	..
132	E. S.	..	F	..	..	..	..	..	..
133	W. S.	..	M	..	..	..	..	..	..
134	W. T. S.	..	M	Illegitimate	..	..	..	..	..
135	W. S.	..	M	Uncle	..	..	..	..	..
136	H. S.	..	M	Family	history healthy	..	..	..	..
137	D. S.	..	..	Family	history good.	..	..	..	..
138	E. M. T.	..	M	..	..	..	..	..	..
139	C. T.	..	M	Family	history healthy	..	..	..	..
140	M. T.	..	F	Father	..	..	..	..	..
141	N. T.	..	F	Family	history healthy	..	..	..	..
142	C. T.	..	M	..	..	..	..	..	..
143	H. T.	..	M	..	..	..	..	..	..
144	C. T.	..	M	..	..	..	..	..	..
145	A. J. W.	..	M	Family	history healthy	..	..	..	..
146	S. W.	..	M	..	..	..	..	..	..
147	W. W.	..	M	Deserted	by parents	..	..	..	..
148	H. W.	..	M	..	..	..	..	..	..
149	A. W.	..	M	..	..	..	..	..	..
150	C. W.	..	M	..	..	..	..	..	..
151	L. W.	..	F	Brother	Father	..	..	..	..
152	R. W.	..	M	..	..	..	..	..	..
153	L. W.	..	F	Mother, Sister	..	..	..	..	..
154	A. Y.	..	M	Family	history healthy	..	..	..	..

Summary of above list. —One patient alone (No. 102) gives a history of epilepsy, insanity, phthisis, and other nervous diseases (four out of the five).

			Per cent.
	8 patients show a history of three out of the five	.	(7·47)
22	" " phthisis <i>alone</i>	.	(20·56)
23	" " epilepsy only	.	(21·49)
4	" " alcohol "	.	(3·73)
3	" " insanity "	.	(2·8)
12	" " other nervous diseases only	.	(11·21)
10	" " epilepsy plus phthisis	.	(9·34)
0	" " epilepsy " alcohol	.	(0)
5	" " epilepsy " insanity	.	(4·67)
2	" " epilepsy " nervous diseases	.	(1·86)
4	" " phthisis " nervous diseases	.	(3·73)
4	" " phthisis " alcohol	.	(3·73)
3	" " phthisis " insanity	.	(2·8)
2	" " alcohol " insanity	.	(1·86)
2	" " alcohol " nervous diseases	.	(1·86)
2	" " insanity " nervous diseases	.	(1·86)

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One is specially struck with the prevalence of the history of phthisis, either alone or in conjunction with one or other of the morbid tendencies totalling 43 out of 107 cases (40·18 per cent.). Epilepsy comes second with 40 (37·38 per cent.); this includes the 10 counted both with epilepsy and phthisis. Alcohol history could only be traced in 8 cases, insanity in 10, and other nervous diseases in 20 cases.

As modern scientific views are rather opposed to the *direct* inheritance of tuberculosis, is it possible that tuberculous parents propagate children predisposed to epilepsy?

TABLE No. 2.

NEAR RELATIVES.					MORE DISTANT RELATIVES.											
Cases.	Father.	Mother.	Sister.	Brother.	Paternal Uncle.	Maternal Uncle.	Paternal Aunt.	Maternal Aunt.	Paternal Grandfather.	Paternal Grandmother.	Maternal Grandfather.	Maternal Grandmother.	Other Relationship.	Uncle (not stated whether P. or M.).	Aunt (not stated whether P. or M.).	Grandparents (not stated).
Epilepsy .	10	6	10	16	2	2	1	1	4	1	0	2	1 (Cousin)	3	1	1
Alcohol .	10	...	...	...	1	...	...	...	1	...	...	1	...	...	...	...
Phthisis .	19	12	5	6	3	3	0	5	7	7	3	4	0	2	0	0
Insanity .	2	1.	1	3	3	0	3	0	3	1	2	1	1 (Step-Sister)	...	1	1
Other Nervous Diseases }	7	10	0	3	0	1	1	0	2	1	1	3	...	...	1	...

I have prepared another table (Table No. 2) showing the relatives affected in the 107 cases. As one would expect, the parents, brothers and sisters of the patients are the chief to exhibit the diseases :—

	<i>Near relatives.</i> (Father, mother, sister, brother.)				<i>More distant relatives.</i> (Grandparents, uncles, aunts, etc.)
Epilepsy	42	19
Alcohol	10	3
Phthisis	42	34
Insanity	7	16
Other nervous diseases	20	10

Here again phthisis is more prevalent in the *distant* relatives than is epilepsy.

If it be true that the tubercular diathesis is more likely to produce epilepsy than any other disease, it is encouraging to remember the great fight now being made against tuberculosis, which may incidentally help greatly in reducing the number of epileptic children born into the world.

Such an eminent authority on epilepsy as Dr Aldren Turner says: "The dominant predisposing cause of epilepsy is ancestral epilepsy"; and again, "Tubercle does not seem to stand in any

relation other than through the debilitating influences which their co-existence with epilepsy entails."

It is questionable whether the result of my investigations quite confirms the above opinion, as it seems possible that another dominant predisposing cause of idiopathic epilepsy is tuberculosis.

Abstracts

ANATOMY.

ON THE STRUCTURE OF THE CHORIOID PLEXUS. (Zur Frage (524) über den Bau des Plexus chorioidens.) HWOROSTUCHIN, *Arch. f. mikr. Anat.*, Bd. 77, H. 3, 1911, S. 232.

THE author has examined the choroid plexus in a number of animals, special attention being directed to the structure of the epithelium and to its nervous supply.

The material was fixed for twenty-four hours in a mixture of equal parts of 1 per cent. osmic acid and 2½ per cent. potassium bichromate, after which it was washed, hardened in alcohol, and cut in paraffin.

The epithelial cells vary greatly in shape and size, suggesting different stages of functional activity. Scattered through their protoplasm are numerous granules of different sizes and of different staining reactions, often arranged in rows. These granules appear to be of two kinds—one staining with acid fuchsin and resembling typically secretory granules, and the other staining black or green with osmic acid and subject to great variation in appearance. Usually when the former are present in large numbers the latter are greatly diminished, so that they probably do not represent two different kinds of secretion. The latter granules are thought from their reactions to be lecithin. Mitosis was not seen in any of the cells, and, in those cells where two nuclei were present, it was considered to be the result of an amitotic division.

Numerous nerve fibres, both medullated and non-medullated, were present both in the blood vessels and forming a network under the epithelium, from which fine branches could be traced to end in the epithelial cells themselves.

A. NINIAN BRUCE.

THE TOPOGRAPHY OF THE CEREBRAL CORTEX OF THE
(525) **GUINEA-PIG.** WILLIAMINA ABEL, *Proc. Roy. Soc. Edin.*,
Vol. xxxi., Part 3, 1911, p. 397.

A BRIEF resumé is given of the more important work on the question of cerebral localisation in the lower animals, special attention being given to the work of Bolton and Watson on the significance of the various cell laminæ of the cerebral cortex, and to the work done by Miss Allan on the psychical processes of the guinea-pig.

The present investigation consists of a histological and an electrical examination of the cerebral cortex.

For the histological examination transverse sections were made $10\ \mu$ in thickness, and stained with methylene blue. One cerebral hemisphere was cut in a complete series of sections, while the other was first divided into suitably sized blocks and then sectioned transversely. From the first series of sections a general idea is obtained of the distribution of the various types of cellular arrangement in the cortex, while the second affords the opportunity of measuring the different laminæ. Five different types of cortex are to be recognised, each of which are built up of five zones or laminæ. In all the areas a granular zone may be recognised, but in the areas lying near the posterior pole this zone is very poor, while numerous large pyramidal cells lie in the sub-granular zone. In the middle and anterior portions of the cerebrum the granular zone gradually becomes better marked, while the large pyramidal cells in the sub-granular zone gradually disappear, and are quite absent in the anterior portion.

Electrical stimulation of the cortex demonstrates the presence of a motor area in the posterior half of the cerebrum. Definite movements of hind and fore limbs, of the nostrils, eyelids, facial muscles, and neck are obtained, but it is impossible to mark off definite areas for those movements. Briefly summarised, the results are:—

1. Histologically, the whole cortex may be divided into five distinct types of cell lamination.
2. Electrical stimulation demonstrates the presence of a motor area in the posterior half of the cerebrum.
3. This motor area is characterised by large sub-granular pyramidal cells, and a comparatively poor granular zone.
4. The motor area is evidently not purely motor, but sensori-motor.
5. The sensory area is extremely diffuse. From a consideration of the work of Allan and Watson, the suggestion is made that a great portion of the area is associated with the kinæsthetic sense.

AUTHOR'S ABSTRACT.

COMPLETE UNILATERAL INTERRUPTION OF THE FISSURE
(526) **OF ROLANDO.** A. B. THOMSON, *Journ. Anat. and Physiol.*,
Vol. xlv., July 1911, p. 433.

A DESCRIPTION is here given of two brains, in both of which the annectant gyrus of the fissure of Rolando is situated on a level with the surface of the cerebral hemisphere, and interrupts the fissure so as to divide it into two segments. In both cases the condition was unilateral, and only present on the right side. A photograph of each is given. A. NINIAN BRUCE.

THE CILIARY GANGLION IN THE BIRD. (*Das Ganglion ciliare*
(527) *der Vögel*.) M. VON LENHOSSÉK, *Arch. f. Mikr. Anat.*, Bd. 76,
H. 4, Feb. 1911, S. 745 (26 figures in text).

THE author has examined the ciliary ganglion by Cajal's silver method in the chick, the duck, the turkey and the dove, particular attention being directed to the chick, where the development of the ganglion was also studied. The ciliary ganglion in the chick consists of an oval swelling of the oculomotor nerve, and receives no fibres of either sensory or sympathetic origin. Two ciliary nerves pass from it to the eyeball, one of which receives a sensory twig from the fifth nerve. The oculomotor fibres are distinguished by their thick medullated sheaths, and all terminate round the nerve cells of the ciliary ganglion. The ciliary nerves arise from these cells, are characterised by fine medullated sheaths, and thus are all post-ganglionic.

The nerve cells of the ganglion are unipolar, the axis-cylinder being continued without further division into a ciliary nerve fibre; T-shaped division of the axis-cylinder was not found. Only one oculomotor fibre passes to each nerve cell. This approaches the cell at the region from which the axis-cylinder emerges, the general appearance thus somewhat resembling a kidney glomerulus, the oculomotor fibre, however, being at once recognisable on account of its greater thickness. A description of the different methods of termination of these fibres round the cells of the ciliary ganglion is then given (well illustrated), the simplest form consisting simply of a division of the fibre into two or more branches which become closely applied to the periphery of the cell. From this all stages can be traced to the more complicated types where the axis-cylinder divides repeatedly into a large number of fibrils, which ultimately completely surround and encapsule the cell.

The author then discusses whether these cells should be regarded as sympathetic, sensory, or motor. He gives a short

account of the sympathetic and sensory cells of the chick for comparison, and finally concludes that the cells of the ciliary ganglion are neither sympathetic nor sensory. The ganglion, in fact, bears no relation whatever to the sympathetic or trigeminal nerves, but is a purely motor ganglion, belonging to the oculomotor nerve alone and representing a motor cell station in the course of this nerve between its nucleus of origin and peripheral destination.

A. NINIAN BRUCE.

A STUDY OF THE ANTERIOR HORN CELLS OF AN
(528) **ABRACHIOUS AND THEIR RELATION TO THE DEVELOP-**
MENT OF THE EXTREMITIES. CURTIS and HELMHOLZ,
Journ. Comp. Neurol., Vol. xxi., No. 4, Aug. 15, 1911, p. 323.

A DESCRIPTION is here given of the cervical region of the spinal cord of a full-term negro child born with total absence of the upper extremities, no rudimentary limb formation even being present. The clavicles and scapulæ were symmetrically developed. A short description of the muscles of the pectoral region is given, together with a brief account of the other organs, all of which were normal.

No sign of inflammation, nor of any pathological change, was found in the spinal cord, except that the cervical enlargement was absent. Down to the level of the fourth cervical segment no difference was found from a normal control cord. The gray matter from the fifth cervical to the first dorsal segment, however, was greatly diminished in amount, the anterior cornua being smaller and less angular than usual. The number and size of the nerve cells in the mesial groups did not appear to be greatly reduced, but the cells of the lateral groups showed enormous diminution in number. The authors thus feel warranted in positively asserting that the lateral cell groups of the anterior cornua normally furnish the cells of origin for the nerves which supply the upper extremities.

The cells of the intermedio-lateral tract were not apparently affected, although the "middle-cells" were somewhat increased in number.

The paper is illustrated by figures of each segment from the third cervical to the first dorsal, sections from the present case and the control being placed side by side for comparison.

A. NINIAN BRUCE.

THE STRUCTURE OF THE NERVE CELLS OF AN INSECT.

(529) HILTON, *Journ. Comp. Neurol.*, Vol. xxi., No. 4, Aug. 15, 1911, p. 373.

THREE main types of cells are found in the different ganglia of the insect: (1) neuroglia networks, (2) neuroblasts, and (3) functional nerve cells with Nissl granules. Intercellular bridges were often seen passing from one nerve cell to another and uniting them together, the neuro-fibrillæ being continuous from the one cell to the other through this network. Tracheæ were traced between, and, in many cases, into cells of all sizes, and branches were found to be given off at their edges or within them.

A. NINIAN BRUCE.

SOME REMARKS ON THE MOTOR AND SENSORY TRACTS

(530) **OF INSECTS.** HILTON, *Journ. Comp. Neurol.*, Vol. xxi., No. 4, Aug. 15, 1911, p. 383.

THE motor cells of each ganglion lie mainly towards the ventral side, and chiefly supply the motor nerves connected with it. Motor fibres do not appear to pass from one ganglion to the next. Sensory fibres, however, may end in the ganglion to which their nerve trunks are connected, or may pass through one or more ganglia without termination. In many ganglia large nerve cells are also found with numerous processes, all of which may end within the ganglion itself, or pass to end in various other ganglia, thus forming association fibres, but although each ganglion appears to be closely connected to its neighbours, each appears to a large extent to be complete in itself.

A. NINIAN BRUCE.

PHYSIOLOGY.**CONTRIBUTION TO OUR KNOWLEDGE OF THE FUNCTION**

(531) **OF THE FRONTAL LOBE OF THE BRAIN OF THE DOG.**

(Contribution à la connaissance de la fonction du lobe frontal du cerveau du chien.) FELICIANGELI, *Archiv. ital. de Biol.*, Tome lv., Fasc. ii., 1911, p. 257.

AN account is here given of seven experiments upon dogs in which varying amounts of the frontal lobe were removed. The animals were anæsthetised with chloroform and ether, after a previous subcutaneous injection of morphia. The frontal bone was trephined and the aperture enlarged sufficiently to give access to

the frontal lobe, bleeding being stopped by means of sterilised paraffin. A portion of the frontal lobe was then removed with a fine bistoury.

The author applies the term prefrontal lobe to that part of the hemisphere situated in front of the presylvian fissure, and the term frontal lobe to that part in front of the cruciate sulcus, the prefrontal lobe thus being considered as a part of the frontal lobe.

The prefrontal lobe of the left side was successfully removed in four dogs, in none of which was any evidence of sensory or motor change found.

Complete extirpation of the frontal lobe was, however, followed by a tendency for the animal to turn toward the same side, and by some affection of heat, cold, tactile and muscular sense, but the symptoms were merely transitory and soon passed off.

These symptoms, however, became still more marked when the post-crucial convolution was removed along with the frontal lobe.

A. NINIAN BRUCE.

**ON THE FUNCTIONS OF THE CEREBRUM: CONCERNING THE
(532) LATERAL PORTIONS OF THE OCCIPITAL LOBES. S. I.**

FRANZ, *Amer. Journ. of Physiol.*, Vol. xxvii., No. 6, Sept. 1, 1911, p. 308.

THE author destroyed the lateral portions of the visuo-sensory cortex in the occipital region in eight monkeys by means of an electric thermo-cautery. Two cases are described. Previous to the operation the animals were taught visuo-motor associations by feeding them with pieces of bread of different colours, some of which had been sweetened by saccharin and others made bitter by quinine. After recovery from the operation it was found that the visual ability of the animals was not affected, although the movements for food were inaccurate or slow or indecisive, but only when the eyes were a factor in the production of the movement. The visual discrimination function was not considered to be affected nor the motor ability *per se*, and the author thinks that the parts of the brain destroyed have a sensory function, which is connected with the eye muscles and not necessarily with the retina.

A. NINIAN BRUCE.

ON OUR KNOWLEDGE OF AUTOLYSIS OF THE BRAIN. (Zur

(533) *Kenntnis der Autolyse des Gehirns.*) FRIEDRICH SIMON,
Ztschr. f. physiol. Chem., Bd. 72, 1911, p. 463.

IF nervous tissue be subjected to autolysis, proteolysis takes place. At the same time, phosphorus bound organically (in the form of phosphatides, protagon, etc.) is split off and transformed into phosphorus bound inorganically in the form of phosphates.

W. CRAMER.

ON THE PRESENCE OF CHOLINE IN THE BRAIN OF THE OX.

(534) *Über den Befund von Cholin im Ochsengehirn.*) M. KAUFFMANN, *Ztschr. f. physiol. Chem.*, Bd. 74, 1911, p. 175.

FRESH ox-brains do not contain any free choline.

The fact that traces of free choline have been found by previous observers (Gulewitsch) is ascribed to a slight decomposition having been induced by the method of extraction.

W. CRAMER.

ON THE PATHWAYS FOR THE BULBAR RESPIRATORY

(535) **IMPULSES IN THE SPINAL CORD.** DEASON and ROBB,
Amer. Journ. of Physiol., Vol. xxviii., No. 1, April 1, 1911, p. 57.

HEMISECTION of the spinal cord between the medulla and the phrenic nuclei causes paralysis of the diaphragm on the hemisected side. According to Porter, if the opposite phrenic nerve be now divided, permanent paralysis of the diaphragm on the side of the divided nerve results, with immediate commencement of respiratory rhythm in the diaphragm on the side of the hemisection. The authors show that traction or mechanical stimulation of the phrenic nerve on the intact side of the cord, dyspnoea, and stimulation of the sciatic nerve will all produce a similar result. These are all conditions which induce an increased intensity of the bulbar respiratory impulses, and they conclude that the immediate crossing of the bulbar respiratory impulses on section of the phrenic nerve after previous hemisection of the opposite side of the cervical cord must be a case of spread of reflex responses with the increased intensity of the nervous impulses.

A. NINIAN BRUCE.

REGENERATION OF AUERBACH'S PLEXUS IN THE SMALL

(536) **INTESTINE.** MEEK, *Amer. Journ. of Physiol.*, Vol. xxviii., No. vi., Sept. 1, 1911, p. 352.

THE author transected the small intestine in the dog and cat, and tested for physiological regeneration by the passage of a wave of

inhibition through the transected area, the integrity of Auerbach's plexus being necessary for the conduction of this wave of inhibition. They found a return of function in the dog as early as the hundred and twenty-second day. In the cat they were unable to detect any evidence of passage of this wave on the fortieth day, at which period muscular and epithelial regeneration is practically complete. Return of function is thus associated with a slowly regenerating tissue, presumably the nerve plexus.

They were also able to demonstrate the presence of nerve fibres crossing the scar tissue and entering the plexuses on either side by means of the gold chloride method.

A. NINIAN BRUCE.

ACTION DE L'OXALATE DE SODIUM SUR LE SYSTÈME
(537) **NEURO-MUSCULAIRE.** COUVREUR and SARVONAT, *Journ. de Physiol. et de Path. gén.*, No. v., Sept. 15, 1911, p. 709.

SODIUM oxalate produces in the frog associated symptoms of excitation and of paralysis. In each case the symptoms are due chiefly to an action on the medullary centres, but partly also to an action on the nerve trunks. The voluntary muscles are only slightly affected by sodium oxalate. The fibrillary twitching produced in muscle by application to its nerve of sodium oxalate can be removed by subsequent application of calcium chloride.

J. A. GUNN.

DIE WIRKUNG DES KRISTALLISIERTEN ACONITIN AUF DEN
(538) **MOTORISCHEN NERF UND AUF DEN SKELETTMUSKEL**
DES KALTBLUTERS. HARTUNG, *Archiv. f. exp. Path. u. Pharm.*, Bd. 66, H. 1-2, 1911, S. 58.

ACONITIN differs from curarin in paralysing the motor nerve trunk when directly applied to it. Aconitin is much more toxic to nerve than to muscle. In strong concentration aconitin produces stimulation followed by paralysis of the motor nerves. The phenomena of stimulation consist of fibrillary twitches, lowering of threshold stimulus, and in abnormalities of muscle contraction. These effects are prevented by previous curarisation, and are due to an action on the motor nerve ends.

J. A. GUNN.

- ZUR FRAGE DER NERVENERREGBARKEIT BEI DER OXALAT-**
 (539) **VERGIFTUNG.** CHIARI and FRÖHLICH, *Archiv. f. exp. Path. u. Pharm.*, Bd. 66, H. 1-2, 1911, S. 110.

IN warm-blooded animals oxalic acid poisoning produces marked diminution of the excitability of the vagus nerve to the heart, and augments the vagus paralysis produced by atropine. Calcium chloride can restore the excitability only in less severe cases of oxalic acid poisoning. Other less important nervous effects are described.
 J. A. GUNN.

PATHOLOGY.

- LESIONS OF THE CERVICAL SYMPATHETIC IN EXOPHTHALMIC GOITRE.** (Lésions du Sympathique Cervical dans le Goitre Exophtalmique.) HORAND, *Rev. Neurol.*, No. 11, Juin 1911, p. 669. (5 figs.)

A DESCRIPTION of the changes found in the cervical sympathetic ganglia removed at operation by Jaboulay from two cases of exophthalmic goitre. The ganglia were very vascular, with periarteritis and hyaline degeneration in places. The connective tissue was greatly hypertrophied, and the nerve cells themselves were greatly reduced in number, and showed various degrees of degeneration. Pigmentation was common. Two processes could be distinguished—an acute and a chronic. In the former various stages of chromatolysis are found, while in the latter are included granular disintegration of the protoplasm, irregular outline of the cell, and pigmentation.
 A. NINIAN BRUCE.

- ON THE FUNCTION OF THE CHOROID GLANDS (CHOROID PLEXUSES) OF THE CEREBRAL VENTRICLES AND ITS RELATION TO THE TOXICITY OF CEREBRO-SPINAL FLUID.** KRAMER, *Brain*, Vol. xxxiv., Part I., 1911, p. 39.

IF the choroid plexuses of the lateral ventricles of the dog are rubbed up in normal saline solution, injection of the filtrate into the jugular vein of the dog will cause a marked fall in the blood pressure. Section of both vagi does not affect this action, which holds also for the choroid plexuses of man, but not for those of the rabbit, calf, or sheep. This depressant substance was thought to be a globulin.

The cerebro-spinal fluid obtained by lumbar puncture in man

from certain cases associated with hyper-secretion of cerebro-spinal fluid was found to contain an excess of this "depressant," evidently secreted by the choroid plexuses—*e.g.* 5 c.cs. of cerebro-spinal fluid drawn from a marked case of delirium tremens gave a prolonged depression, while 30 c.cs. from a case which had recovered from delirium tremens produced only a very slight fall in blood pressure.

A. NINIAN BRUCE.

VARICOSE DILATATIONS OF THE POSTERIOR SPINAL

(542) **VEINS.** (*Dilatations variqueuses des veines spinales postérieures.*) JUMENTIÉ et LEVY VALENSI, *Rev. Neurol.*, No. 14, July 30, 1911, p. 81.

A CASE is reported from the post-mortem room, in which there was marked varicose enlargement and tortuosity of the intraspinal venous plexuses, anterior and posterior, and also of the veins along the cord itself, and especially on its posterior aspect. Large curling veins accompanied the individual roots coming off from the cord.

A complete autopsy was not permitted, so that it was impossible to say whether any varicosity of the veins existed elsewhere in the body. The patient had, however, been operated on for varicocoele. He had been a man aged forty, and had had flaccid paraplegia since the age of three years. The internal condition of the cord is not described.

P. W. SAUNDERS.

ON CAPILLARY ANGIECTASES IN THE CENTRAL NERVOUS

(543) **SYSTEM.** (*Sur certaines Angiectasies Capillaires des Centres Nerveux.*) M. H. CLAUDE and Mlle. M. LOYEZ, *Rev. Neurol.*, No. 15, Aug. 15, 1911, p. 181.

A CASE is reported in which, at autopsy, there was found in the pons a small triangular reddish patch, looking like a hæmorrhage, but proving on histological examination to be composed entirely of an accumulation of little vessels of different sizes, but all extremely dilated and full of blood corpuscles of various kinds and in various proportions. A smaller similar focus was found in the cervical cord.

There were other changes of a syphilitic nature over the pons and medulla, and in the vessels generally. There were also degenerative changes in the pyramidal tracts. (The patient had had hemiplegia.)

Various theories are suggested as to the origin of the capillary dilatations. No symptoms are definitely ascribed to them, but some are suggested as being possible

P. W. SAUNDERS.

**INFECTION OF RABBITS WITH THE VIRUS OF POLIO-
(544) MYELITIS.** H. K. MARKS, *Journ. of Exp. Med.*, Vol. xiv.,
No. 2, 1911, p. 116.

KRAUSE and Meinicke in 1908 claimed to have infected rabbits, but most experimenters since have failed. Marks has now shown conclusively that rabbits may be infected with the virus with filtrate prepared from the nervous tissues of monkeys having experimental poliomyelitis. He has not succeeded in transferring it indefinitely, but has transmitted it through a series of six rabbits and then retransferred it to monkeys, producing the typical disease in them. In the rabbit there is nothing resembling the characteristic lesions of the central nervous system in human beings and monkeys. The virus is not confined to the central nervous system, but occurs in other organs also. Only a small proportion of the experimental rabbits became infected with the virus; the symptoms, when they did occur, came on between the eighth and the fifteenth day. They were of the nature of paroxysmal convulsions coming on suddenly, and were usually fatal within half an hour or less. Post-mortem examination showed merely a marked hyperæmia of the central nervous system, and no other striking condition of the nervous system or other organs.

This discovery is of importance as indicating a possible reservoir for the virus, which under certain circumstances may be transmitted to human beings.

J. H. HARVEY PIRIE.

CLINICAL NEUROLOGY.

**OCCUPATION NEUROSES (WRITER'S CRAMP, ETC.); RECOVERY
(545) AFTER PSYCHO-ANALYTIC MEASURES FOLLOWED BY
RE-EDUCATION** Preliminary Communication. TOM A.
WILLIAMS, *Wash. Med. Annals*, Jan. 1911; *Month. Cyclo.*,
July 1911.

THE true professional neurosis is psychogenically perpetuated, even though it may have been at first produced by a physical disability. To show this, five cases are studied. They are:

1. A right torticollis and cramp of the right arm while counting money. The pathogenesis was traced to an unpleasant incident with a fellow-employee who sat behind and to the right while they were counting money in the treasury. The patient's impatience interrupted the great improvement.

2. Writer's cramp in a bank-teller, who refused treatment and had to change occupation.

3. Tremulous writer's cramp in a paymaster, which was traced through a psychological mechanism in one interview, which led to recovery after one month, which persists two and a half years later.

4. Writer's cramp in a woman who always hated correspondence. Cured in four months after unveiling psychological mechanism.

5. Complex multiple cramps in a psychasthenic woman of thirty. After persevering psychoanalysis and arduous education for six months, the patient recovered the power of writing with the right hand.

In no case was a sexual factor found in the genesis.

Treatment, after psychoanalysis, consisted of explanation of the mechanism until the patients themselves could expound it, following which psychomotor discipline preceded the re-education of the professional act.

AUTHOR'S ABSTRACT.

THE DIAGNOSTIC VALUE OF DYSCHRMATOPSIA IN (546) NERVOUS DISEASES. CARL D. CAMP, M.D., *Journ. Nerv. and Ment. Dis.*, No. 6, June 1911, p. 321.

DYSCHRMATOPSIA is defined, for purposes of the paper, as a condition of reversal or interlacing of the visual fields for colour, and the author gives the results of his examination for it in eighty-three cases of very various functional and organic diseases, cases of pure hysteria being, for the most part, excluded, as these had been dealt with already by Parker, who found dyschromatopsia present in 72 per cent. of fifty cases of hysteria examined.

The author concludes that the presence or absence of dyschromatopsia is of little aid in distinguishing functional and organic diseases, as it may occur in either. It may be of value, however, in differentiating the different functional conditions, for while it occurs very often in hysteria, it does not seem to be present in other functional conditions such as neurasthenia, psychasthenia, migraine, epilepsy, unless they are complicated by hysteria.

In brain lesions it does not occur from a lesion strictly localised in extent or symptoms, and so is of no localising value. It was not present in any purely spinal cord lesion.

P. W. SAUNDERS.

AURICULAR AND PARA-AURICULAR HERPES ZOSTER. (De (547) l'herpès zoster auriculaire et para-auriculaire.) I. CLOSIER, *Thèses de Paris*, 1910-11, No. 313.

THE writer describes the following varieties:—1. Auricular zoster properly so-called, preceded by otalgia and affecting any part of

the external ear. 2. Auricular or para-auricular zoster (*i.e.* involving the facial or occipito-cervical region) associated with facial paralysis, which may be pre-eruptive, concomitant, or post-eruptive. The usual duration of the paralysis is one to two months, but it may be transient, or, on the other hand, persist indefinitely. 3. Auricular or para-auricular herpes with facial paralysis and hypoacusis. Sometimes there is perversion of hearing or, more rarely, hyperacusis. These auditory phenomena are usually mild, and do not persist long after the disappearance of the eruption. 4. Auricular or para-auricular herpes associated with Ménière's disease. Rarer clinical forms are herpes with facial paralysis and a bucco-pharyngeal eruption, and herpes with auditory symptoms, but without facial paralysis.

J. D. ROLLESTON.

THE CLINICAL DIAGNOSIS OF EARLY TABES DORSALIS (548) WITH NEGATIVE WASSERMANN REACTIONS. A CASE WHERE REACTION BECAME POSITIVE ONLY AFTER SALVARSAN. COMMENTS UPON SALVARSAN IN PRETABETIC STATES. TOM A. WILLIAMS, *Virginia Med. Semi-Month.*, April 21, 1911; *Med. Press and Circular*, August 30, 1911.

DISCUSSION of differential diagnosis of the case of a man of 30 having chronic radiculitis, shown by recurrent pains with loss of reflexes, *viz.*, both Achilles, one patellar and one gluteus, and diminution of one patellar, one gluteus and bulbo-cavernosus. Deep hypæsthesia and hypotonia of lower limbs. Hyperæsthesia of left cutaneous radicular distribution of S 2, and right L 45 and S 12. There was no iridoplegia, Romberg or other ataxia, nor a diadocokinesis. The sero-reaction was negative for three months, but became weakly positive after ten weeks' cessation of treatment by intramuscular injections of 1 per cent. mercuric chloride fifteen minutes every other day for six weeks, which caused great improvement, the pain ceasing for nearly two months. After salvarsan (intravenously) the sero-reaction became more intense, and amelioration was only slight. A second mercurial course improved him, and a second dose of salvarsan increased the weight 8 per cent., and abolished the pains for three weeks. After relapse mercury was resumed later, with less effect than formerly.

Two other cases are still free from symptoms, and the sero-reaction is negative four and four and a half months respectively (now 8 and 8½ months) after salvarsan intramuscularly.

So far, all the author's cases where salvarsan was given intravenously have relapsed. These will be studied in a later publication.

AUTHOR'S ABSTRACT.

THE FRENKEL SYSTEM OF EXERCISES FOR TABES. J. G.
(549) GARSON, *Brit. Med. Journ.*, Aug. 26, 1911, p. 420.

AN interesting case illustrating the beneficial effect of systematic practice of the exercises designed by Frenkel of Heiden for restoring the power of co-ordinate movements in persons affected by tabes dorsalis.

The patient contracted syphilis in 1894, for which he had prolonged treatment. Ten years later symptoms of tabes appeared which had so reduced his powers of locomotion that he was only able to walk badly on two sticks and frequently fell. Knee reflexes were lost, the range of movement of the joints was increased, Romberg's sign, the Argyll-Robertson pupil, some degree of hypotonia and diminished sensibility were present, also a very markedly ataxic gait, bladder symptoms, and lightning pains.

The patient was put to do walking exercises daily on the 21 cm. unstepped track, particular attention being paid to the manner of advancing and managing the feet while doing so. By degrees he learned to correct faulty methods of progression to acquire the proper movements of normal progression. Half, quarter, three-quarter, whole, and mixed steps forwards, sideways and backwards were successively practised on the 21 cm. stepped track, and finally on the narrow 11 cm. track, also the methods of sitting down and rising up from a chair and turning were taught him. During the exercises concentration of thought on the acts being done was enjoined. Marked improvement followed the frequent repetition of the exercises, and their performance became easier and more precise. After returning home the patient continued to practise the exercises, and a year later reported that his progress had "quite surpassed his most sanguine expectations," he had entirely discarded the aid of his stick indoors, and his legs were well under control. This satisfactory result has been maintained. A complete installation of the plant recommended by Frenkel has been set up, and arrangements for the treatment of these cases made at Eversley by the author.

AUTHOR'S ABSTRACT.

THE DIFFERENTIAL DIAGNOSIS OF TABES. H. MATTHEWS,
(550) *Practitioner*, Vol. lxxxvii., No. 3, Sept. 1911, p. 392.

THIS paper contains nothing new. It merely emphasises the importance of not overlooking an underlying tabes in persons suffering from various sudden acute symptoms, which are of the nature of "crises," etc., and which may be mistaken for the primary condition.

A. NINIAN BRUCE.

**A NOTE ON THE ÆTIOLOGICAL INFLUENCE OF PREGNANCY
(551) UPON MOLLUSCUM FIBROSUM.** B. C. HIRST, *Amer. Journ. Obst.*, 1911, lxiii., p. 256.

A RECORD of a case in a woman, a vii-para, aged 38, who presented an abundant eruption of molluscous tumours and pigment patches. Her mother had had the same affection to a marked degree. At eighteen four or five typical growths appeared on the anterior surface of the body, but did not increase. During her first pregnancy, at twenty-six, the growths rapidly increased in number, but after delivery ceased to develop. In each successive pregnancy there was an increase in the number of the growths, but no such increase in the intervals between the pregnancies.

J. D. ROLLESTON.

**REPORT OF A CASE OF MULTIPLE NEUROFIBROMATA, WITH
(552) A REVIEW OF THE SUBJECT BASED ON 262 CASES
REPORTED IN THE LITERATURE.** D. FRIEDLANDER,
Journ. Cut. Dis., 1910, xxviii., p. 497.

THE patient, a man aged 25, presented between 600 and 700 bluish red tumours on the face, trunk, and limbs, numerous fawn-coloured pigment patches indifferently distributed, and a condition resembling leucoderma on the neck and extending down between the scapulæ. The pigment areas were present at birth, and the tumours developed later. The patient learned to walk late, and there was a history and evidence of rickets. His intelligence was below the average. Statistics show a congenital element in only 40 per cent., but Friedlander thinks this figure is too low, and attributes it to early cases being overlooked. A hereditary element occurs in 14 per cent. Least frequent is the family element.

J. D. ROLLESTON.

**VOLUMINOUS MOLLUSCUM PENDULUM OF THIGH IN VON
(553) RECKLINGHAUSEN'S DISEASE.** (*Molluscum pendulum
volumineux de la cuisse au cours d'une maladie de Reckling-
hausen.*) G. PASCALIS, *Bull. et mém. Soc. anat. de Paris*, 1911,
6 sér., xiii., p. 102.

A WOMAN, aged 38, admitted to hospital for metrorrhagia showed all the signs of von Recklinghausen's disease and an enormous molluscous growth of the left thigh. At the first operation the molluscum was removed, and at the second hysterectomy was performed for fibroids. Recovery took place.

J. D. ROLLESTON.

A CASE OF PRINGLE'S NÆVUS AND NEUROFIBROMATOSIS.

(554) (*Ein Fall von Naevus Pringle und Neurofibromatosis [von Recklinghausen].*) A. HINTZ, *Arch. f. Derm. und Syph.*, 1911, cvi., p. 277.

THE patient was a woman, aged 27, with recently acquired syphilis. No family history could be obtained. She presented, on the one hand, the red nodules on the face and papillomata on the terminal phalanges characteristic of adenoma sebaceum, and, on the other hand, the soft fibromata, sessile and pedunculated, on the shoulders, neck, and trunk, pigment patches, scoliosis and mental deficiency, indicating von Recklinghausen's disease. Hintz regards these two conditions as due to a developmental error.

J. D. ROLLESTON.

RECKLINGHAUSEN'S DISEASE IN CHILDHOOD. (Zur Kasuistik

(555) *des Morbus Recklinghausen im Kindesalter.*) E. HIRSCH, *Prag. med. Woch.*, 1911, xxxvi. p. 375.

A RECORD of three cases. The first two were in brothers. Their mother, an undersized, mentally-defective woman, had had generalised pigment spots since birth, and generalised sessile and pedunculated molluscous tumours since the age of thirteen. The elder child, admitted on the tenth day of life, showed pigment spots in the left lumbar region, over the sacrum, and on the right thigh. Ten weeks later spots appeared on the abdomen, left trochanter, right forearm, right scapula, and subsequently on the left knee. The younger child showed no skin lesions till the twenty-fourth day of life, when pigment spots appeared on the right knee, the back, and right scapula. Eight days later pigment spots were found on the thorax. In neither child were there any tumours.

The third case was in a girl aged six years, with no family history. The skin was of a dull brown colour, and showed a tumour, probably a plexiform neuroma, measuring 10 cm. by 11 cm., extending between the ninth dorsal and the third lumbar vertebræ. It had first appeared in the second year of life. The back, especially in the neighbourhood of the tumour, thorax, inguinal folds, and gluteal region, showed pigment spots. There was bilateral genu valgum. Mental development was normal.

J. D. ROLLESTON.

THE CONTROL OF EPIDEMIC POLIOMYELITIS. S. FLEXNER,

(556) *Amer. Journ. Child. Dis.*, Aug. 1911, p. 96.

IN this paper Flexner notes that the mortality of poliomyelitis in North America, since it began to assume epidemic characters in

1907, has been about the same as in Europe, viz., approaching 10 per cent. Undoubtedly, also, mild and abortive forms have prevailed along with the severer paralytic types, and in many instances their nature has been overlooked.

Control may be of two kinds: (1) preventive, and (2) through the employment of modes of treatment. With regard to preventive measures, it must now be taken as proved that both active and passive human carriers may aid in the spread of the disease, but we do not yet know how long the virus can exist in these to state precisely what the period of quarantine should be. Experimentally it can survive in the mucosa of the nasopharynx of monkeys for some weeks or even months, and chronic human carriers may also be found, but from our present knowledge he suggests a month's isolation as sufficient in ordinary cases, but longer if the acute or febrile stage is prolonged. Special attention should be given to the destruction of the nasal and buccal secretions. It is quite a possibility that some of the domestic animals may act as reservoirs for the virus, they themselves either not suffering, or else being affected in a manner not at all resembling the disease as it is known in man. Insects may possibly play a part in the spread. It has been shown that the common house-fly can harbour the virus on their bodies in a living and infectious state for at least forty-eight hours.

With regard to the control by treatment, Flexner does not hold out great hopes of serum treatment, since the immunity principles developed after an attack are relatively weak.

The use of urotropin for its internal antiseptic action in the meninges offers the greatest hope at present, and there seems to be a probability of more powerful derivatives of that substance being found.

He views the case for the treatment of human beings with considerable hope, regarding much of the supposed damage inflicted on the nervous system as remediable, as the brunt of it really falls on the meninges.

J. H. HARVEY PIRIE.

A CASE OF ACUTE POLIOMYELITIS IN AN ADULT. C. M. (557) HINDS HOWELL and B. T. PARSONS-SMITH, *Lancet*, Sept. 6, 1911, p. 812.

THE patient, a man aged 22, one day complained of headache and general debility, causing him to return early from business. He passed a restless night, and next morning was vomiting frequently and had a very rapid pulse. In the evening he had severe pains in the lower part of the back; his legs were weak and then became quite paralysed. Next day his temperature was 100° F., pulse 120,

and respiration 38; intelligence and memory unimpaired; the lower limbs were quite flaccid and powerless, the trunk muscles much affected, the arms somewhat paretic, the head and facial muscles unaffected until evening, when they also became involved, and the trunk and upper limbs completely paralysed. Sensation was unaffected, as were the sphincters. The tendon reflexes and skin reflexes were all absent. Consciousness was maintained till the end. The respiration gradually became shallower, and the patient died two days after he was first taken ill.

Only the spinal cord and a portion of the cerebral cortex were received for examination; the latter showed nothing abnormal. In the cord there was nothing to note in the meninges, beyond a little, small round-cell perivascular exudate in a few places. The vessels were engorged, but showed no sign of thrombosis. The intra-medullary vessels showed a more marked perivascular exudate, chiefly of lymphocytes. Throughout the whole length of the cord there was a diffuse inflammatory change in the grey matter, with every here and there denser foci of cells. The cells were chiefly lymphocytic, but there were many others which did not appear to be derived from the blood, but which the authors think were probably in part derived from the vessel walls, and in part a product of neuroglial proliferation. The reaction was not confined to the anterior horns, it was also intense in the vicinity of Clarke's column and in the posterior horns. The ventral horn nerve cells had largely disappeared, those of Clarke's column had survived better, but also were seriously affected.

A table is given summarising some points helpful in making a differential diagnosis between acute poliomyelitis, Landry's paralysis, acute toxic polyneuritis, and acute ascending myelitis.

J. H. HARVEY PIRIE.

THE STATISTICS OF INFANTILE PARALYSIS. C. A. HODGETTS,
(558) *Pediatrics*, Sept. 1911, p. 521.

THE statistics refer to the mortality and morbidity of the disease in Canada for the period November 1, 1909, to October 31, 1910. Six hundred and fifty-eight cases were reported, the majority being in Ontario and Quebec. Of these, 23 were under one year, 105 were two-year-old children, 341 were between the ages of one and five years. The age incidence varies considerably from the Boston and from the New York figures. As regards season occurrence, no month was without cases. August furnished most, and 76 per cent. occurred in August, September, and October. The case mortality was 7 per cent.

J. H. HARVEY PIRIE.

PACHYMENINGITIS INTERNA. J. W. BLACKBURN, *Journ. Nerv. (559) and Ment. Dis.*, No. 8, Aug. 1911, p. 467.

THE paper is based on 374 cases, occurring in some 2000 or more autopsies on the insane. Statistics are given as to the age of the patients and the particular form of insanity present. Pathological findings in other parts of the body than the brain are mentioned. The frequency, etiology, and symptoms of the condition and the commonest situations of the lesion are given.

The main part of the paper deals with the pathological sequence of events in the production of the condition, and the author gives his adherence to the view which regards the primary process as an inflammation rather than a hæmorrhage. The method of formation of new membrane on the inner surface of the dura mater and the cause and results of hæmorrhage into this are described in detail.

P. W. SAUNDERS.

TRAUMATISM RESULTING IN MENINGITIS AND MENTAL (560) SYMPTOMS. EIGHT YEARS' HISTORY. CRANIECTOMY. RECOVERY. (Traumatisme remontant à huit ans suivi de méningite. Troubles mentaux. Deux craniéctomies. Guérison.) A. PRINCE, *Rev. Neurol.*, No. 18, Sept. 30, 1911, p. 365.

A CASE is reported in which symptoms of a markedly neurasthenic, and even mental, character had persisted for eight years after a fall from a bicycle.

The headache complained of by the patient was always localised to one spot, the optic discs were hyperæmic, the cerebro-spinal fluid showed, on lumbar puncture, lymphocytosis and increased tension. Otherwise there were no signs suggesting an organic lesion.

A trephine opening made over the situation of the headache (left parietal region) showed local thickening of bone, some increased intracranial tension, and some local milkiness of the pia arachnoid, with several little yellow granulations in it. Removal of the bone in this area resulted in cure.

The author regarded the condition as one of chronic localised meningitis, of traumatic origin and probably of tuberculous nature. The proof of its tuberculous character, however, is by no means conclusive.

P. W. SAUNDERS.

EPIDEMIC CEREBRO-SPINAL MENINGITIS AND ANTI-(561) MENINGOCOCCIC SEROTHERAPY. (Méningite cérébro-spinale épidémique et sérothérapie anti-meningococcique.) F. THÉROUDE, *Thèses de Paris*, 1910-11, No. 17.

THÉROUDE examined eleven cases of epidemic cerebro-spinal meningitis which had been discharged from hospital between one

and six months previously. Four were normal in every way. The remaining seven, whose ages ranged from twenty months to thirty-two years, presented the following symptoms:—One had complete unilateral deafness, one diminution of the ankle jerks and frequent headaches, one had vertigo, one complete bilateral deafness and psychical troubles, two psychical troubles only, and one exaggerated knee jerks and psychical troubles. J. D. ROLLESTON.

THE ACCIDENTS OF ANTI-MENINGOCOCCIC SEROTHERAPY.

(562) (*Les accidents de la sérothérapie anti-méningococcique.*) M. DUBOSC, *Thèses de Paris*, 1910-11, No. 254.

THE complications following the injection of anti-meningococcic serum may be mild, grave, or fatal. Among the mild complications are serum rashes and pain, due to pricking the nerve roots at the time of injection, and to distension of the inflamed meninges. The grave complications are due either to an aseptic meningeal reaction (*v. Review*, 1910, viii., p. 702) or to anaphylaxis (*Ibid.*, 1909, vii., p. 552). Fatal cases have been recorded by the writer in conjunction with Courtois-Suffit and by Hutinel (*Ibid.*, 1910, viii., pp. 181 and 702). The thesis contains the histories of twenty cases collected from literature. J. D. ROLLESTON.

A NEW CASE OF MENINGO-TYPHOID. TYPHOID FEVER OF

(563) **SUDDEN ONSET WITH MENINGEAL SYMPTOMS.** (*Un nouveau cas de méningo-typhus. Fièvre typhoïde à début brusque par l'état méningée.*) F. J. COLLET and C. LESIEUR, *Bull. et mém. Soc. méd. des Hôp. de Paris*, 1911, xxxi., p. 615.

A RECORD of a case in a neuropathic woman, aged 29. The symptoms were those of cerebro-spinal meningitis, but on lumbar puncture the fluid escaped under only slight hypertension, and contained no microbes and few mononuclears. There was therefore no meningitis, but only the "meningeal state" described by Widal. In spite of the gravity of the onset, the typhoid fever ran an ordinary course, with no further complications except periostitis. J. D. ROLLESTON.

TYPHOID FEVER COMPLICATED BY HEMIPLEGIA. (*Über einen*

(564) *mit Hemiplegie komplizierten Fall von Typhus abdominalis.*) W. RASCHOFKY, *Wien. med. Woch.*, 1911, lxi., p. 1863.

A PREVIOUSLY healthy soldier, aged 24, developed right hemiplegia in the sixth week of typhoid fever. Partial recovery took place.

Raschofsky attributes the hemiplegia to a circumscribed encephalitis, owing to the rapid improvement which took place as the temperature fell. The literature is reviewed, special reference being made to Smithies' case (*v. Review*, 1908, vi., p. 177).

J. D. ROLLESTON.

THE BLOOD-PRESSURE IN DIPHTHERIA. J. D. ROLLESTON, (565) *Brit. Journ. Child. Dis.*, 1911, viii., p. 433.

THIS paper is based on observations on 179 cases of diphtheria in which the systolic blood-pressure was measured with C. J. Martin's modification of Riva-Rocci's sphygmomanometer. In the overwhelming majority the highest readings were obtained in the first week, and the lowest in the second week, the total period of observation, apart from the early fatal cases, ranging from four to fourteen weeks. The occurrence of the highest pressures in the first week is attributed partly to the febrile disturbance of the acute stage before the diphtheria toxins had had time to produce their characteristic effect, and partly to the psychical action caused by the application of an unfamiliar instrument, the latter fact accounting for the highest readings being usually obtained on the first measurement (*cf. Review*, 1911, ix., p. 95). The preponderance of the lowest readings in the second week accords with the clinical fact that this is the time of predilection for the so-called "cardiac paralysis," which should more accurately be called "vaso-motor paralysis," as the vaso-motor centre is affected primarily and the myocardium secondarily.

The relatively highest pressures occurred in two neurotic sisters, aged nine and seven years respectively, in whom the readings ranged between 130 and 148 mm. Hg for a month.

Albuminuria was accompanied by a fall or by no change in the blood-pressure except in a case of uræmia, in which there was hypertension.

In early paralysis—i.e. that occurring within the first fortnight, and including only the so-called "cardiac paralysis" and precocious palatal palsy—any change in the blood-pressure was invariably in a downward direction. Thus, among twenty-three cases of early paralysis, the pressure fell in seventeen and was unaffected in six (palatal palsy only). Among the later palsies, which include ocular, pharyngeal, and diaphragmatic palsies, as well as the ordinary form of palatal palsy, any fall in the blood-pressure was most exceptional. Thus, among fifty-one cases of late palsy, there was a rise of blood-pressure in eighteen, no change in thirty-one, and a fall in two only. The writer suggests that the rise of blood-pressure was due to an irritative condition of the vaso-motor centre in the medulla in which the other nerves had undergone a varying degree of paralysis.

AUTHOR'S ABSTRACT.

E. T. W. HOFFMANN. A MEDICO-PSYCHOLOGICAL STUDY.
(566) (E. T. W. Hoffmann. *Étude médico-psychologique.*) G.
KUENEMANN, *Thèses de Paris*, 1910-11, No. 474.

THIS thesis is an attempt to prove that Hoffmann was a sufferer from alcoholic neuritis, and not from tabes, as hitherto supposed, and that his writings show the influence of the alcoholic psychosis.

J. D. ROLLESTON.

THE SURGICAL TREATMENT OF SOME FORMS OF EPILEPSY.
(567) WM. ALEXANDER, *Lancet*, Sept. 30, 1911, p. 932.

THE author's conclusions are as follows:—

1. There are some cases of epilepsy that prove intractable to general medical and hygienic treatment, and these, unless the disease be somehow arrested, will soon terminate in imbecility and death.

2. In these cases the affected motor area is covered by more or less œdema of the pia-arachnoid, and this œdema probably so affects the cells of the cortex as to predispose to, or cause, the epilepsy and imbecility.

3. In cases with localising aura, we can, by the operation of *fenestration of the dura mater*, drain these œdematous areas and prevent reaccumulations.

4. By the operation the progress of the disease has always been retarded. In several the fits have stopped, and in many have been reduced to fractions of the original number.

The paper should be consulted for details of the operation and of cases which have been treated.

J. H. HARVEY PIRIE.

CEREBRAL TUMOUR. (AFFECTING THE BASAL GANGLIA
(568) **ON THE LEFT SIDE AND BOTH TEMPERO-SPHENOIDAL**
LOBES: FLACCID PARALYSIS: CHANGES IN THE
SPINAL POSTERIOR NERVE ROOT FIBRES.) R. T.
WILLIAMSON, *Med. Chron.*, Aug. 1911.

THE main points of this case are given in the above title. The patient was a man aged 53, who had suffered from severe headaches and impaired vision, the former of twelve months' duration. There was no vomiting, but his memory had failed and he had become dull and apathetic.

The movements of his right arm and leg were feebler than

the left. The knee jerks and tendo-achilles reflexes were absent; there was no ankle clonus: plantar reflex extensor upon the right side, doubtful on the left. Right arm and leg not spastic. Sensation normal, but vision only $\frac{6}{60}$ (each eye); and marked double optic neuritis present. The patient soon developed a complete right-sided hemiplegia, the paralysed right arm and leg never becoming spastic.

At the autopsy a spindle- and round-celled sarcoma was found affecting both temporo-sphenoidal lobes and extending into the left crus cerebri. In the spinal cord, degeneration of the crossed pyramidal tract in the right side, and of the direct pyramidal tract on the left side, was found, together with a number of degenerated fibres in the posterior columns, the loss of knee jerks and absence of spastic condition of the paralysed arm and leg being due to this cause. This case thus supports the theory on which Förster's operation of dividing the posterior spinal nerve roots for spasticity is based.

A. NINIAN BRUCE.

**NOTE ON TWO CASES OF TUMOUR OF THE PREFRONTAL
(569) LOBE IN CRIMINALS.** W. C. SULLIVAN, *Lancet*, Oct. 7,
1911, p. 1004.

THESE two cases are of interest, inasmuch as disorders of social conduct were amongst the earliest symptoms indicating impairment of mental function.

In neither case were physical signs of brain tumour very obvious until just before death. The conduct symptoms (petty thefts, vagrancy, etc.) appeared earlier than any evidence of intellectual disorder, and they were much of the same type as those which occur in general paralysis. Homicidal tendencies are very rare in cases of cerebral tumour; suicidal tendencies appear to be much commoner, although actual suicide is very rare. The writer has only found record of one case (one other such was reported by the abstractor in the *Edin. Med. Journ.*, 1910). The affective tone and character of the impulses, like the other complex mental symptoms of cerebral tumour, seem to be quite independent of the site or nature of the growth. In tumour, as in other cases of cerebral enfeeblement, the character of conduct is determined, not by the brain lesion, but by the state of the organic life. The cerebral lesion is related to the disorder of conduct only in so far that by reducing the intellectual life it increases the predominance of the affective life, and diminishes control over the organic tendencies, allowing impulse to issue more readily in action.

J. H. HARVEY PIRIE.

ORETINISM. B. C. A. LEEPER, *Practitioner*, Vol. lxxxvii., No. 3, (570) Sept. 1911, p. 364. (Three Plates.)

A SHORT description of the condition is given here, the subjects to the disease being divided into three classes—first, cretins, *i.e.* subjects entirely destitute of reproduction and usually of speech; second, semi-cretins, subjects with reproductive faculties and some rudiments of speech, but with intelligence only as far as their bodily wants are concerned; and third, cretinoids, subjects with some aptitude for learning a trade and doing light work. The main points in the clinical appearance are then briefly described, with a few notes upon the skull and nervous system. The differential diagnosis lies between rickets, hydrocephalus, and mongolism. In regard to treatment with thyroid the author recommends at the onset small doses of liq. thyroidei ℥i-ii, or $\frac{1}{4}$ to $\frac{1}{2}$ gr. of thyroid extract, every night, the condition being carefully watched, as some patients are most susceptible to the drug even in the minutest doses. If successfully borne the dose should be gradually increased by the addition of ℥i at a time until tolerance is reached. Photographs of three cases before and after treatment by thyroid are given.

A. NINIAN BRUCE.

MACULOCEREBRAL DEGENERATION (FAMILIAL). EDWARD (571) L. OATMAN, *American Journal of the Medical Sciences*, Aug. 1911.

UNDER this designation the author discusses an interesting condition of which only a few cases have hitherto been described. Two forms are differentiated—the maculocerebral, in which changes occur in the brain as well as in the retina, and the macular, in which the retina alone is affected.

The maculocerebral form commences at the age of about seven years, vision and mentality fail together, and both eyes are always involved. Ophthalmoscopically the retina shows atrophy and pigmentation of the macular area, with optic atrophy and narrowed vessels.

Subjectively reduction of vision with central colour scotoma is found, and later absolute central scotoma, peripheral vision remaining normal. The progress is rapid for two or three years and then very slow.

The mental failure varies in intensity, and its advance is slowed after a moderate degree of imbecility is reached. Total imbecility may ensue, but neither death nor complete blindness are recorded.

The macular form begins later, about puberty, and does not affect the intellect. The same retinal condition is present, but the optic nerve does not become pale so early.

All the recorded cases of both types occurred in otherwise

healthy and normal subjects, and the condition is definitely familial in incidence, one or more members of a childship being affected in each instance, while ancestors and descendants were free. No case is recorded in a Jew.

The author describes in detail two cases of the maculocerebral type, and reports shortly a number of cases of both forms from other sources. The pathological anatomy can only be inferred from the ophthalmoscopic picture as a microscopical examination has not yet been obtained. Atrophy of the outer layers of the retina with depigmentation and exposure of the choroid occurs, and ultimately the retina becomes a thin cicatricial membrane.

As causes are suggested nutritive disturbance possibly depending on a toxin with selective action, or a latent degenerative tendency stimulated by perversion of the developmental forces active during dentition and puberty.

This very interesting paper closes with an account of the difference between maculocerebral degeneration and certain other eye conditions, such as hereditary macular anomaly, retinitis pigmentosa, amaurotic family idiocy, and central chorioretinitis, which present points of resemblance.

There are two plates, which are unfortunately not coloured.

H. M. TRAQUAIR.

PSYCHIATRY.

MORISON LECTURES: THE DIFFERENTIATION OF MELANCHOLIA, THE DEPRESSIVE PHASE OF MANIC-DEPRESSIVE INSANITY. GEORGE M. ROBERTSON, *Journ. Ment. Sci.*, July 1911.

TRUE melancholia is primarily a disorder of the painful emotions, and must be differentiated from such conditions as acute delirious insanity which are associated with anxiety and fear. It resembles folie circulaire, the typical periodic insanity, in the following points:—(1) tendency to periodicity or relapse; (2) liability to alternation in the form of the insanity; (3) absence of any tendency to dementia; (4) prospect of complete recovery between the attacks; (5) strong hereditary predisposition; (6) absence of a definite exciting cause.

Passing on to discuss the symptomatology, the author divides the symptoms into emotional, intellectual, psycho-motor, and physical symptoms, and disorders of volition and conduct. The primary and fundamental symptom is depressed or painful emotion, to which all the other symptoms are secondary. The intellectual phenomena arise from the emotional and are due to a direct inhibition over the ideational functions, but it is possible that some of them may be due to a lack of interest, which accompanies the state of depression, and dulls the patient's

receptivity. The chief of the disorders of intellect are retarded ideation, restriction in the number of ideas, and delusions. In every case of true melancholia the delusions, as Griesenger pointed out, are explanatory in character, and are secondary to the emotional disorder. Hallucinations are rare in true melancholia, and, if a marked feature of the case, should lead one to suspect that a wrong diagnosis has been made. The usual physical symptoms of melancholia are described, and the view stated that the alimentary disorders are probably secondary to the emotional. Dr Robertson considers that the subjective feeling of misery is the reflection of an organic feeling of ill-being caused by centripetal nervous impressions from organs whose metabolism is sluggish and defective.

In dealing with the medico-legal aspects of the subject, care is taken to emphasise the paramount importance of the danger of suicide—a danger which ought to be kept in mind in every case of melancholia. The chief points in the differential diagnosis between melancholia and the depression of neurasthenia and psychasthenia are brought out with great clearness, and the lectures are terminated by a discussion of treatment. The usual general measures are given, and three special methods are described: (1) lowering the blood pressure by means of erythrol tetranitrate; (2) alleviation of the mental pain by means of opium in the form of tinctura opii; and (3) large doses of thyroid extract in cases which tend to become chronic.

W. BOYD.

THE PATHOGENESIS OF A DELUSION. HENRY DEVINE, *Journ. (573) Ment. Sci.*, July 1911.

THIS interesting paper deals with a simple case of delusional insanity which was investigated by Freud's method of psycho-analysis. The case was that of a young woman with a strong hereditary predisposition to insanity, who developed the delusion that she was suffering from an incurable and infectious disease, and became in consequence profoundly depressed. By means of psycho-analysis, in conjunction with the word-association experiments devised by Jung, it was shown that the delusion was merely a symptom indicative of a "complex" or conative trend, which was submerged below the threshold of consciousness, and was of such a painful character that the conscious self refused to recognise it. This complex was quite different in character from the symptom (delusion) to which it gave rise, and turned out itself to be merely a symptom of a still deeper complex, which was of so painful a nature as to be resolutely suppressed by the conscious self. Now that this primary and fundamental complex, the *fons et origo* of the delusion, has been laid bare to the patient, the prospects of her ultimate recovery are a good deal brighter.

W. BOYD.

ASYLUM DYSENTERY. W. J. ADAMS ERSKINE, *Journ. Ment. Sci.*, (574) July 1911.

THIS paper draws attention to three factors in the causation of asylum dysentery: (1) kidney disease, (2) tubercle, (3) influenza, the bulk of the paper being devoted to a consideration of the relation between influenza and dysentery. A number of epidemics of influenza at the City Asylum, Nottingham, are described, all of which were accompanied or followed by outbreaks of dysentery. The two drugs which were found to be most efficacious in the treatment of dysentery were magnesium sulphate— $\frac{1}{2}$ oz. in 2 oz. of water morning and evening—and tincture of belladonna in ten-minim doses.

W. BOYD.

SYPHILIS AND CONGENITAL MENTAL DEFECT. C. G. A. (575) CHISLETT, *Journ. Ment. Sci.*, July 1911.

THE object of this paper is to show that many cases of congenital mental defect which present no obvious signs of syphilis are in reality due to that disease. The Wassermann reaction was taken as the criterion, although three cases of undoubted syphilis gave a negative result. In fourteen cases of idiocy and imbecility there were eight positive results, two cases of juvenile general paralysis both gave positive results, in three cases of epileptic idiocy there was one positive result, and three paralytic idiots were all negative. The family of a general paralytic was examined; three children gave positive and three negative results, none of them showing definite signs of congenital syphilis.

W. BOYD.

THE TREATMENT OF PUERPERAL INSANITY WITH ANTI-STREPTOCOCCIC SERUM. NATHAN RAW, *Journ. Ment. Sci.*, (576) July 1911.

THE results are summarised as follows:—

- (1) Puerperal insanity is only rarely, if ever, caused by septic injection at the puerperal period.
- (2) Anti-streptococci serum of a polyvalent character seems to exert a very favourable influence in many cases of puerperal injection, but does not appear to influence the course of the mental process.
- (3) Puerperal insanity, of whatever variety, is most favourable for cure in a mental hospital, provided that the treatment is undertaken immediately after its onset.

W. BOYD.

Obituary

**JOHN HUGHLINGS JACKSON,
M.D. St And., F.R.C.P. Lond., LL.D., D.Sc., F.R.S.,**

Consulting Physician to the London Hospital and to the National Hospital
for the Paralysed and Epileptic, Queen Square, London.

By the death of Dr Hughlings Jackson, at the advanced age of seventy-six, neurology has sustained a loss which is well-nigh irreparable. Wherever the science is taught or studied the world over the name of Hughlings Jackson was revered not merely as that of a pioneer whose first bold advances into the unknown were made half a century ago, but also of one whose epoch-marking discoveries have stood the test of time and of subsequent experimental investigation in a manner that is rare in these days of ceaseless research. Latterly, it is true, to many of the profession he had perhaps become not much more than a name, and partly from his naturally retiring disposition, partly from certain of the infirmities of old age, comparatively few had the opportunity of keeping in close contact with that wonderful mind and engaging personality whose fascination and charm were undimmed by the passing of time. But his place in the hearts of all who knew him was secure. The professing neurologists of England to-day count it their chiefest privilege to have been taught, directly or indirectly, by him; and as George Meredith was hailed by his brothers of the pen the "novelists' novelist," so in a greater degree and in a truer sense was Dr Jackson the "neurologists' neurologist," a dominating figure among the workers in the field where he laboured to the end with a devotion and an ardour that was to them all a source of constant inspiration. No one ever stood in close relation to him as collaborator or pupil but was deeply conscious of his intellectual power, power that impressed but never overawed, for its outward expression was often associated with a whimsical fancy and an appreciation of the lighter side of things which bore witness to his humanity while they threw his genius into relief.

Dr Jackson and English neurology grew up together. His first recorded contribution to the science that was his own bears the date 1861, while his last appeared in 1909. It is no detracting from the work of his predecessors—and he himself was ever alert to acknowledge indebtedness to the investigations of others—to say that he built on no man's foundation. From the outset his originality of mind led him to look at old things in new ways

as well as to work along entirely novel lines, and for practically fifty years physiology, psychology, and, above all, clinical neurology, were enriched by contributions from his pen whose variety and comprehensiveness are as remarkable as their extent is amazing. According to a record published in the *London Hospital Gazette* in 1895 his papers and monographs had by that time reached the astounding total of 202, and since that date the list must have approximated to something like 250. A glance merely at the titles of a few of these communications is eminently instructive. "Observations on Defects of Sight in Brain Disease" (1863), "On the Use of the Ophthalmoscope in Affections of the Nervous System" (1863) were papers that served greatly to familiarise the profession with the use of the ophthalmoscope, then a comparatively new instrument. In 1864 were published "Hemiplegia on the Right Side with Loss of Speech," "Chorea, with Paralysis affecting the Right Side: Difficulty in Talking," "On Loss of Speech; its Association with Hemiplegia on the Right Side," from which it is clear that Dr Jackson had come to the conclusion that disease of the left hemisphere was associated with disturbances of speech, independently of the French *savant* Broca, whose work was published a year or two previously. In 1866 came "On the Occasional Occurrence of Subjective Sensations of Smell in Patients who are liable to Epileptiform Seizures," in 1867 "Regional Palsy and Spasm," "The Comparison and Contrast of Regional Palsy and Spasm," "The Disorderly Movements of Chorea and Convulsion," in 1868 "Sequence of Spasm in Unilateral Convulsions," in 1870 "A Study of Convulsions,"—papers which were the prelude to a brilliant and famous piece of inductive reasoning whereby Dr Jackson, without one solitary experimental fact to aid him, postulated the existence of a motor area in the distribution of the middle cerebral artery and of centres arranged in an orderly fashion within that area. Thus by the insight of a Master was a new world opened to the physiologist and the clinician, and in his turn to the surgeon. During these fertile years minute and unwearying clinical observation served to accumulate facts on which were based generalisations and hypotheses that were the richest fruit of his analytic and constructive genius. No one can study his Croonian lectures on "Evolution and Dissolution of the Nervous System" (1884), or his Lumleian Lectures on "Convulsive Seizures" (1890), or "The Comparative Study of Diseases of the Nervous System" (Address in Medicine, British Medical Association, Leeds, 1889), or his "Psychology and the Nervous System" (1879), without realising that in Dr Jackson the enthusiasm of the clinical explorer was united to the serenity and dispassionateness of the philosopher, or without feeling that in his published works lie a mine of wealth in which the neurologist will long dig deep for his own instruction and delight. Many of the most

characteristic contributions of Dr Jackson will be found in out-of-the-way papers, in footnotes, in discussions at societies, but their perusal will far more than repay the student for any trouble in procuring them. The "Address on the Psychology of Joking" (1887), the series of "Neurological Fragments" (1895, etc.), the paper on "The Factors of Insanities" (1894), may be referred to, among scores of others, as containing much of the ripest products of Dr Jackson's clinical experience and scientific imagination. The last paper he wrote was in conjunction with Mr Leslie Paton, on "Some Abnormalities of Ocular Movements" (1909).

These brief references gleaned from the storehouse of Dr Jackson's published writings may enable the neurologist to form an estimate—however partial and inadequate—of his indebtedness to the founder of the modern science. But the attempt to couch the expression of that indebtedness in conventional phrase is repelling to those who knew him as their teacher. His pupils were bound to him by a threefold cord of affection, reverence, and admiration, and the link now severed was somehow of a personal and intimate kind for which mere words do not avail. His name may be perpetuated in Jacksonian epilepsy, in the Jackson syndrome of unilateral bulbar disease, his fame may be ever associated with the doctrine of cerebral localisation, with the symptomatology of cerebellar disturbance or of lesions of the uncinate gyrus, but those who knew him will not think of these things when in quiet hours memory brings back the man. To their mind will come the figure of one in whom genius and modesty dwelt together, who was as quick to appreciate the merit of others as he was generous in sharing with them the fruits of his own labours, who by a word, a phrase, could suggest and stimulate, who never alienated a friend or was discourteous to an opponent. It was in quiet conversations that Dr Jackson gave of his best. It was then that his fancy, his rare humour, that went deep to the heart of things, his imagination, had full play. Who that heard it can forget the delicate emphasis (for which italics would be too strong) with which he used to accentuate differing *nuances* of meaning in allied words, so that they stood out in the listener's mind imbued with fresh significance? Thus enunciated, his favourite dicta seemed to acquire a new value as they came from his lips. His enjoyment of the humorous side of things was seen in the relish with which he turned to analyse "spoonerisms," in his quiet way of poking fun at his friends, in the stories he would tell, often aptly to exemplify some point in neurology or psychology, but equally often for their own sake. He was wont to relate with keen delight how once in days gone by he had been summoned by a practitioner of the old school to the bedside of a patient whom he found in severe epileptiform convulsions, and how his neglect of the obvious phenomena of the seizure in order to study the behaviour

of the erector spinæ and recti abdominis had so disconcerted the old gentleman, that he whispered in Dr Jackson's ear, "It's a fit."

In 1900 Professor Eduard Hitzig, delivering the second Hughlings Jackson Lecture before the Neurological Society of London, said that Dr Jackson's scientific work was that of a man of whom any nation may rightly be proud. He was, indeed, the greatest scientific neurologist of the nineteenth century, and all, of whatever school, who in any way find their paths lying among the multifarious and complex manifestations of nervous disease, unite to-day in mourning the loss of their leader and their guide.

BOOKS AND PAMPHLETS RECEIVED.

Buckley, Albert C. "The Katatonic Symptom-Complex; Report of a Case occurring in a Middle-Aged Male" (*Amer. Journ. of Insanity*, Vol. lxviii., No. 1, July 1911, p. 33).

Flexner, Simon. "The Control of Epidemic Poliomyelitis" (*Amer. Journ. of Dis. of Children*, Vol. ii., Aug. 1911, pp. 96-101).

Maas, Otto. "Über eine besondere Form der Encephalopathia saturnina [Meningitis serosa]" (*Monatsschr. f. Psychiat. u. Neur.*, Bd. 30, 1911, S. 207).

Marks, Henry K. "Infection of Rabbits with the Virus of Poliomyelitis" (*Journ. Exper. Med.*, Vol. xiv., No. 2, 1911).

Oatman, Edward L. "Maculocerebral Degeneration (Familial)" (*Amer. Journ. of the Med. Sciences*, Aug. 1911).

Vorkastner, W. "Wichtige Entscheidungen auf dem Gebiete der gerichtlichen Psychiatrie" (X. Folge). Halle: Carl Marhold. Pr. M. 1.

Williams, Tom A. "Quackery and Medical Education" (*Washington Med. Ann.*, Vol. x., No. 4).

"Annual Report of the Medical Officer to the Governors of the Manchester Grammar School for the Year ending July 31, 1911."

Review of Neurology and Psychiatry

Original Articles

THE SENSORY PHRENIC AND ITS ORGANS.

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1. *Preliminary.*

It is astonishing that anyone should ever have believed that the phrenic is a purely motor nerve, for of some six or seven branches which it gives off to its organs two only, at the outside, could by any possibility be even in part motor, viz.: (1) the terminal diaphragmatic branches, and (2) the branch from the right phrenic nerve to the inferior vena cava and right auricle of the heart.

It is evident that Hippocrates (1) recognised the occasional association of pains in the sub-diaphragmatic region with clavicular pains, for Gueneau de Mussy (5) quotes his aphorism: "Si sub septo transverso fit dolor et ad claviculam non se extendat, etc." The same observer also quotes Galen (2) to the effect that cervical pains accompany certain maladies of the liver; these Galen held to be due to tension on the vena cava. This remark suggests strongly that Galen knew of the existence of the branch from the right phrenic nerve to the inferior cava and right auricle of the heart. If I be right, then it looks as if the knowledge of the existence of this branch may have been lost for many centuries: at any rate, the branch was re-discovered by H. Luschka (4) in 1853.

It is clear from the above quotations that at least two of the great select human spirits of antiquity came very near to the conception of a sensory portion of the mixed phrenic nerve.

2. *Anatomical and Experimental.*

(a) By far the best account known to me of the gross anatomy of the phrenic nerve is that given in Piersol's "Human Anatomy," Philadelphia and London, 1907; I shall follow it here. The peripheral supply varies on the two sides, thus:

The right phrenic gives branches to: (1) pleura; (2) pericardium (probably strictly to the extra-pleural and the extra-peritoneal tissue, but this needs further exact anatomical study both by dissection and by microscopical work); (3) diaphragm—(a) sternal and anterior part of costal part, (b) lumbar portion; (4) peritoneal covering of diaphragm; (5) to inferior vena cava and right auricle of heart; (6) by way of the diaphragmatic plexus to (a) liver, coronary ligament, and peritoneum of liver, (b) to the right suprarenal body.¹

The left phrenic nerve gives branches to: (1) pleura; (2) pericardium—small, sometimes absent; (3) diaphragm—(a) left sternal and antero-lateral part of left costal part, (b) lateral portion of left costal portion, (c) left lumbar portion; (4) usually to left semilunar ganglion and to left suprarenal body *via* the cœliac plexus.

(But Luschka, in 1853, described branches from both phrenic nerves to the peritoneum.)

Thus we have the heart and liver and peritoneal surfaces supplied only on the right side; the pleura and pericardium on both sides; a difference in the peripheral distribution of the supra-renal branches; and the diaphragm on both sides, but there is a larger part of its costal portion supplied on the left side than on the right.

(b) In the year 1853, and again in 1863, H. Luschka (4) described filaments as being given off from the lower part of the nerve (the sub-diaphragmatic portion) to (a) peritoneum, (b) on right side only to inferior vena cava and right auricle. I have failed to find in any anatomical work who first discovered

¹ Ramström failed to find any branch of the phrenic to the capsule of the liver ("Anat. Hefte," Merkel and Bonnet, 1906, Band 30, S. 92).

the various sensory branches of the phrenic nerves, such as the pleural, pericardiac, hepatic, and supra-renal, but I suspect they were all known to both Hippocrates and Galen.

(c) In 1888 S. Pansini (7) studied histologically in guinea-pigs, rabbits, and foetal dogs and cats the terminations of the phrenic nerve in the diaphragm: he found that they form with the last three intercostal nerves a complicated plexus which contains microscopical ganglia. He held the physiological importance of this plexus to be that it thus provides for a better contraction of all the muscular fibres of the diaphragm. He considered that these small ganglia are of importance for the function of respiration, and that they act automatically. He refers to the teaching of many physiologists that there are, in addition to the bulbar respiratory centre, similar centres in the cervical and thoracic spinal cord. He describes communications of the phrenic with: (1) the sympathetic, viz.: (a) with inferior cervical and first thoracic ganglia, (b) with a filament on the internal mammary artery, (c) with the cardiac and the pulmonary plexus (Beaunis, Bouchard, Sappey); (2) the ansa of the descendens hypoglossi (Valentin, Hirschfeld); (3) the nerve to the sub-clavius muscle; (4) the nervus accessorius (Blaudin and Valentin); and (5) occasionally with a fine filament of the vagus (Sappey).

He describes three parts of the peripheral distribution of the phrenic to the diaphragm, viz.: (1) anterior or sterno-costal, (2) lateral or costal, (3) posterior or lumbo-vertebral (in the rabbit there are occasionally four branches).

He describes two plexuses on the diaphragm, viz.: (1) anterior, or sterno-costal; (2) posterior, or lateral, with the last three intercostal nerves, to the lumbo-vertebral part.

(d) It was not till the year 1891 that the existence of sensory fibres in the phrenic nerve was proved experimentally by John Ferguson (9). He arrived at this important discovery by a beautiful piece of accurate reasoning and well-planned experimentation, thus:—In a fatal case of progressive muscular atrophy, in which the diaphragm had been paralysed during life, he found, on autopsy, that, while some of the fibres of the phrenic nerve were completely degenerated and others degenerating, about one-third of the total number were normal. He concluded, therefore, that the escape of these in a disease known

to affect motor structures pointed to the suggestion that the nerve is not wholly motor.

Next, he experimented as follows:—

Cat 1.—Section of right phrenic; three weeks later he opened the abdomen and tested the sensibility of the diaphragm (method not stated): found it much reduced on right side. The whole of the fibres in that nerve were atrophied, *i.e.* a complete lesion destroyed what had been spared in his case of the motor affection progressive muscular atrophy.

Cat 2.—Divided third, fourth, fifth and sixth cervical dorsal roots just distal of their ganglia. Examination on tenth day showed degeneration of only about one-third of the fibres of the phrenic. "These were no doubt the sensory fibres cut off from their ganglia in the experiment. Diaphragmatic anæsthesia was found on the side of operation before the animal was killed." It is a pity that Ferguson did not in *Cat 2* examine histologically all the branches of the phrenic to their peripheral distribution into their respective organs. Ferguson mentions that he had recently had a patient who died of hepatic abscess with inflammation of the serous membrane covering the diaphragm in contact with the liver: there had been severe pain in the back of the neck and out on the shoulder, always made worse by movements, coughing or vomiting.

(*e*) Ferguson's discovery of sensory fibres in the phrenic nerve was confirmed in 1894 by C. S. Sherrington¹: he mentions that it is one of several nerves, which he enumerates, "which contain abundance of fibres from sensory ganglia." Schäfer and Symington state, in "*Quain's Anatomy*," 1908, that Sano (1898) found that the sensory fibres of the diaphragm are connected with the third to the sixth cervical spinal ganglia, but I have not been able to gain access to Sano's paper to which they refer.

Wiedersheim and Parker² write that in mammals the phrenic nerves arise usually from the third to the eighth cervical nerves, but usually from the fourth, or fourth and fifth. It is also well known that in man also the variations are considerable.

3. *The Sensory Components of the Phrenic Nerve.*

Our knowledge on this subject is still very imperfect. We know by the experimental work of Ferguson, 1891, that in the cat the diaphragm receives a large number of sensory fibres from the phrenic nerve: we can hardly doubt that these are of two

¹ *Journ. of Physiol.*, Vol. xvii., 1894, p. 255.

² "*Comparative Anatomy of Vertebrates*," third edition, London, 1907, p. 185.

kinds: (1) muscle-sensory, (2) postural. And we learn from Sano's work that the muscle-afferents of the diaphragm rise in the third, fourth, fifth, and sixth cervical dorsal root ganglia. And there our knowledge of the afferent components of the phrenic nerve comes to a full stop.

We must remember that our knowledge of the splanchnic afferent division is far less than that of the remaining three fundamental primary subdivisions of the nervous system; and, further, we have two separate teachings on the matter. Thus Warrington and Griffith,¹ writing on the cells of the spinal ganglia, refer to the widely accepted view of Kölliker, favoured by Langley, that afferent visceral fibres rise in the spinal ganglia; their number is small; they appear to be medullated, and they are not of the smallest size; whereas Dogiel's view, adopted by Onuf and Collins, was that afferent visceral fibres must have their origin within the ganglia or plexuses of the sympathetic system. In the case of the splanchnic afferent fibres of the phrenic nerves we know that there are several communications with the phrenic both at the root of the neck and also in the abdomen (diaphragmatic plexus). It is difficult to see what can be the meaning of these phrenic communications if not to transmit splanchnic afferent fibres to the organs it supplies. We know that the phrenic communicates with the middle and inferior cervical ganglia of the sympathetic. But this fact would not of itself prove that any of the splanchnic afferent fibres of the phrenic rise in the cells of these two sympathetic ganglia, for these fibres might simply pass through them without forming any cell-connection. It should be possible to determine by experimental methods—viz., a combination of the retrograde chromatolysis method and the degeneration method—the exact ganglionic origin, course, and exact peripheral distribution of all the splanchnic afferent fibres of the phrenic and its organs. Especial interest attaches to two questions, viz.: (1) whether the right auricular branch of the right phrenic nerve contains any afferent fibres, and (2) what is the ganglionic origin of the supra-renal fibres of the phrenic nerve. It may turn out that the seventh and eighth cervical dorsal root ganglia give origin to these, a point that is worthy of experimental testing.

4. *The Histology of the Phrenic Nerve Trunk.*

It will be remembered that it was the terminations of the phrenic nerves in the diaphragm that Pansini studied histologically in 1888: I have previously referred to his work. I have hitherto failed to find any published description of the histology of the phrenic trunk, even by those investigators who have paid special attention to the histology of nerve trunks, such as W. H. Gaskell, F. H. Edgeworth, C. S. Sherrington, and

¹ *Brain*, Vol. xxvii., 1904, p. 314, footnote.

J. O. Wakelin Barratt. Further study is needed on this point: it appears to be unknown whether the phrenic trunk contains any non-medullated fibres.

5. *The Development of the Phrenic Nerve.*

I have failed to find any detailed account of the development of the phrenic nerve. It is true that the phrenic is often figured in dealing with developmental studies: thus it appears several times in Franklin Mall's¹ well-known paper on "The Development of the Diaphragm": it is also figured in G. L. Streeter's² study of the "Development of the Cranial and Spinal Nerves in the Occipital Region of the Human Embryo." A detailed study of the development of the phrenic nerve would be very welcome.

6. *The Clinical Importance of the Sensory Phrenic.*

I have mentioned at the beginning of this paper the remarkable passages from Hippocrates (1) and Galen (2). It appears that no important observations were made after the time of Galen till the year A.D. 1835.

(a) In the year 1835 Bouillaud (3), in his work on "Diseases of the Heart," attributed the pain of pericarditis "to the reaction of the inflammation on the phrenic nerves" (Vol. i., p. 454). Again, in discussing the nature of cardiac neuralgias, he writes that "they seem to reside in the phrenic and intercostal nerves," (Vol. ii., p. 492).

(b) We come next to a most important paper by Gueneau de Mussy (5) (1853) on diaphragmatic pleurisy. He describes its relationship with the phrenic nerve; he states that it is not rare; he found tenderness on pressure over the lower insertion of the sterno-mastoid muscles in the course of the phrenic nerve (p. 274). He believed that the pain in the neck and supra-clavicular regions was communicated to the phrenic nerve; these pains he held to be reflex (p. 275). In a footnote on this page he refers to spontaneous pains in the region of the shoulder and supra-clavicular regions. It is clear that he fully grasped the essential fact of these pains as being really afferent phrenic pains,

¹ *Bull. Johns Hopkins Hosp.*, Vol. xii., 1901, pp. 158-171, 45 figs., "On the Development of the Human Diaphragm."

² *Amer. Journ. of Anat.*, Vol. iv., No. 1, Dec. 1904.

because, on p. 275, he speaks of these "as a phenomenon of irritation by continuity, and that whereas usually irritation is propagated in a centrifugal manner, here, on the contrary, it travels from the periphery of the phrenic nerve to its origin. The vomitings that are frequently seen in diaphragmatic pleurisy he considered to be the result of a reflex action, if the anastomoses of the phrenic and vagus exist, as Haller thinks." Doubtless Gueneau de Mussy, Bouillaud, Galen, and Hippocrates did not fully grasp the afferent nature of the phrenic nerve, in part, as we do now; but we can hardly doubt that these very wide-awake clinicians must have pondered deeply over the subject. Under the heading of Diagnosis, p. 279, de Mussy says that "the reflex supra-clavicular pains are met with in pericarditis and in general pleurisy; in the latter this morbid sensibility is usually less well marked." We can all agree with him here. He also says that in hepatitis there may be the same supra-clavicular pains. He has some incidental remarks on what he calls "Rheumatism of the Diaphragm." He advises for diaphragmatic pleurisy, among other measures, local applications to (1) seat of pains, (2) base of chest. His paper is one of the most interesting I have read, and it discusses many matters that are of interest, but space forbids me to refer here to them. It will be evident presently that his work (quoted by Peter, the next observer) must have greatly helped Peter; and let us not forget that it was Peter's work (1871) that inspired Ross (1888), who in turn inspired Henry Head (1894 *et seq.*), James Mackenzie (1893 *et seq.*), and, indeed, all others who have studied the question of referred pains. Our debt is therefore a great one to this brilliant Frenchman, Noel Gueneau de Mussy.

(c) In 1871 M. Peter (6) described for the first time his phrenic neuralgia, or, more strictly, his diaphragmatic neuralgia which is, of course, not exactly the same thing. He says, in a footnote on p. 303, that he does not find it described by Romberg, Valleix, Axenfeld, Duchenne, Fernet, nor in any of the recent works on internal pathology which he names. He refers to the previous teaching of Bouillaud (3) (1835) and Gueneau de Mussy (5) (1853). He states that his diaphragmatic neuralgia is common: "it is perhaps associated with dorso-intercostal neuralgia, angina pectoris, certain maladies of heart and aorta, spleen or liver, or certain functional affections of these organs,

and it has always been confounded with these conditions, but it is often quite independent of them." We may here remark that at the present time few writers, if any, believe in a true non-organic diaphragmatic neuralgia nor in a true phrenic neuralgia. Still, we do well to be cautious in this matter; for if Peter be right, it is our function to recognise this neuralgia. It is to be noted that although the title of his paper is diaphragmatic neuralgia, he speaks quite often of a phrenic neuralgia. A true phrenic neuralgia, if it exist, might involve any of the cutaneous areas of the third to sixth cervical dorsal roots: thus there could be, theoretically, on Peter's view, a true supra-renal neuralgia, a pericardiac, pleural, etc. But we know nothing of such neuralgiæ; indeed, whenever we find pain in what we may conveniently think of as the "phrenic areas," *i.e.* any of the cutaneous areas from third to sixth cervical ganglia, we should think of the possibility of an organic lesion of diaphragmatic region, liver, peritoneum, supra-renal body, or pleura, or pericardium (including great vessels, angina pectoris, etc., etc.).

Peter goes on to describe the following seven groups of his diaphragmatic neuralgia, and details numerous cases in illustration, *viz.*: (1) simple, (2) with hysteria or epilepsy, (3) with angina pectoris and cardio-aortic affections, (4) with cardiac affections but without angina pectoris, (5) with exophthalmic goitre, (6) with splenic affections, (7) with hepatic conditions: he mentions hepatic colic with pains in shoulder, neck and clavicle.

In writing on splenic affections he states (p. 333) that he has especially noted this diaphragmatic neuralgia in malarial intoxication with enormous splenic enlargement. He quotes a case of left phrenic neuralgia in a soldier, *æt.* 32. He interprets this as a malarial perisplenitis setting up a diaphragmatic peritonitis and so the neuralgia in left shoulder and left hypochondrium; there was also spasmodic cough, as in a previous case of his own. It is clear from this passage that Peter recognised that splenic enlargements can cause phrenic pains, but only in a secondary manner, *viz.*, by involving other structures which are innervated by the sensory branches of the phrenic nerve. But it is also evident that throughout his paper he mixes up organic phrenic neuralgia with his own non-organic in a truly astonishing fashion.

He draws attention to the frequency of left phrenic neuralgia in affections of heart and great vessels (p. 336). The spontaneous pains are aggravated by pressure; specially tender points he found were (1) the anterior insertion of the diaphragm in the region of the seventh to the tenth ribs, but especially the ninth; (2) the posterior insertion, especially over the last rib; (3) the lateral part of neck, outside the inner head of the sterno-mastoid muscle, *i.e.* on the course of the phrenic in front of the

scalenus anticus ; (4) costal cartilages, the third and fourth ; (5) retro-sternal. Under the heading "Douleurs associées ou d'irradiation," on p. 338, he mentions, among others, pains in the lower jaw "derivant de la même origine," and on mastication. He thinks this results probably from the anastomoses between the phrenic and the ansa hypoglossi. Other pains are shoulder (epaulette), elbow, little finger and ulnar nerve. He remarks on the fact that these nerves are the first which arise from the brachial plexus, and are therefore the nearest to the origin of the phrenic. He says he does not believe these associated pains are produced by a reflex mechanism, but by irradiation. His words here are explicit (pp. 338, 339) : "il me semble qu'elles ont lieu plutôt par irradiation et en vertu de la loi de communauté d'origine, la douleur naissant en un point de terminaison d'un plexus et se transmettant de proche en proche aux diverses branches de ce plexus, et même aux branches les plus rapprochées d'un plexus voisin, sans passer par la moelle." He also states that in phrenic neuralgia the second to fifth cervical vertebræ are painful on pressure, the sixth very rarely, the third and fourth most frequently. He discusses functional troubles of (1) respiration, (2) mastication, (3) deglutition, (4) movements of left arm. He states on p. 342 that phrenic neuralgia is commoner on the left side. Idiopathic cases, those without any discoverable causal lesion, are associated with anæmia, nervousness, cardio-aortic affections (left-sided neuralgia), aortic lesions (atheroma, periaortitis, aneurysm), cardiac neuroses (angina pectoris, exophthalmic goitre), and in all these cases the proximate cause of the phrenic neuralgia is the morbid radiation (rayonnement) of the primary lesion by the phrenic nerve *via* the intermediation of the cardiac plexus. He says pericarditis is associated with left-arm pain. *He makes the profoundly important statement that "the phrenic is not exclusively motor, but is a mixed nerve"*¹ (pp. 342, 343).

He says the phrenic has the same relationship to the cervical plexus that the sciatic bears to the sacral plexus: his remarks on "Diaphragmite," diaphragmatic peritonitis, and "Rheumatisme du Diaphragme" will be found on p. 345. He states his belief, on p. 345, that diaphragmatic pleurisy is very common and is usually benign (this is my own experience too). He has some remarks on the points of resemblance between gastralgia and phrenic neuralgia (p. 346). Finally, on p. 348 he mentions that right shoulder pain in hepatic affections is symptomatic of neuralgia of the right phrenic nerve.

I have quoted this brilliant Frenchman thus at great length for two reasons, viz. : (1) because, though we need not to-day accept all he writes as correct, it still remains as by far the greatest piece of clinical work ever done on the sensory phrenic in all human history; and (2) because, as will be seen immediately, James Ross appears to have owed almost everything he knew of the sensory phrenic in disease to the work of

¹ Italics are mine.

Peter and his predecessors ; and yet, from a study of Ross' paper, we find that he made only the most meagre references to Peter's work, and none whatever to Peter's predecessors from Hippocrates and Galen to Gueneau de Mussy. And British writers have hitherto written as if Ross invented the sensory phrenic !

(d) In 1888 James Ross (8) wrote a very instructive, and in some respects original, paper on the segmental distribution of sensory disorders. The clinical part of his paper is given most graphically. It is evident that he had either previously read, or knew of, Peter's paper and its teaching by the following passage :—

On p. 353 he writes that a few days before he wrote his paper he was discussing with his students a case of pleurisy with shoulder-tip pain, and "in casting about for an explanation one of the students suggested that, considering the connections of the phrenic, the pain might be caused by irritation of that nerve. *It then occurred to me that Peter had described a phrenic neuralgia, and on referring to his description I found*¹ that he regards pain over the shoulder-tip as a constant symptom." But Ross cannot have referred to Peter's paper with any thoroughness, for he mentions such conditions as angina pectoris, etc., without stating the previous work of Peter and others. And it is a fact that nearly all the conditions mentioned by Ross had been previously pointed out by others.² The conditions detailed by Ross are: (1) pleurisy, (2) pericarditis, (3) peritonitis, (4) passage of gall-stones, (5) angina pectoris, (6) abscess of liver, (7) perihepatitis. He held that the stitch in pleurisy is "mainly caused by spasm of the intercostal muscles and of the diaphragm from reflex irritation" (p. 352). He speaks of the "associated pain often felt in pleurisy, often urgent and severe, extending over the outer third of the clavicle to the shoulder-tip; sometimes the pain feels as if a nail were being driven into the joint, and in these cases it may be inferred that the sensory nerves of the joint, a branch of the supra-scapular derived from the fourth, and of the circumflex from the fifth, cervical root are in a state of irritation." He goes on to say that "in view of the exquisite tenderness of the

¹ Italics mine.

² The single exception is abscess of liver; at any rate the writer knows of no earlier record of this than that of Ross.

diaphragm in pleurisy and peritonitis it can hardly be destitute of sensory nerves." Observe here that there is no mention that he owed this knowledge to Peter's definite statement, which I quoted just now in italics, that the phrenic is a mixed nerve.

Ross gives a graphic account of a case of pleuro-pneumonia in a highly nervous, gouty man of thirty-five. There were very severe paroxysms of cutting and radiating pains, neuralgic in character, on the shoulders. Ross notes the curious fact that the pain was more persistent on the left shoulder, though the pleurisy is situated on the right side, and he adds that there were no signs of pericarditis and no suspicion of aneurysm. There was also present tumultuous action of the heart, with severe pain at mid-sternum. Ross attributed this to "associated irritation of the vagi."

(e) In 1891 John Ferguson (9) mentioned his recent experience of a case of hepatic abscess (verified on autopsy) with severe pain at back of neck and out on the shoulder, always made worse by movements, coughing, or vomiting. Curiously, this is the only case I can recall from my very extensive reading on the sensory phrenic in which an autopsy confirmed the clinical diagnosis. Ferguson adds at the end of his short paper, after quoting the work of Ross on the sensory phrenic, that "Peter and Henle have both suggested the same thing (*i.e.* the mixed nature of the phrenic), but advanced no proofs in support of it." I have failed to find when or where Henle expressed this opinion.

(f) I have not found any published work of any importance on the sensory phrenic from the year 1891, when Ferguson made his great discovery of sensory fibres in the phrenic nerve. But, from time to time, one comes across references to phrenic pains in, at first sight, most unlikely places. Thus Harvey Cushing,¹ in a paper describing two cases of tumour of the hypophysis, mentions that his second patient, a woman, had had pneumonia during childhood. In describing the headache, he writes that it was at first general in character, of late largely confined to right side of head, extending chiefly into the right trigeminal area; it is exaggerated by any excitement or physical strain, and *may extend into the neck and shoulders.*² Here we can hardly doubt that this peculiar distribution of the pain was determined by old pleuritic basal adhesions. It is just these conditions of physica

¹ *Journ. of Nerv. and Ment. Dis.*, Nov. 1906, p. 704.

² Italics mine.

and psychical strain and excitement, to say nothing of illness, that bring out in the shape of referred pain the existence of old thoracic or abdominal disease that has been slumbering for years past.

Only a few modern text-books of anatomy, physiology, medicine, or neurology make any important reference to the existence of a sensory portion of the phrenic nerve. One recent writer of an excellent work on "Diseases of the Organs of Respiration," who gives six situations in which tender spots may occur in diaphragmatic pleurisy, makes the astonishing statement in the year 1909 that the phrenic is not a sensory nerve! Much valuable information on the sites of pain referred from inflamed organs, or tumours of the same, will be found in Osler and Macrae's excellent "System of Medicine," in which great attention is paid to the exact situation of pain in visceral diseases.

(g) Large numbers of cases of referred phrenic pains have been misunderstood by clinicians; for we must remember that the existence of a sensory portion of the phrenic nerve is still quite unknown to large numbers of medical practitioners; and few men excel in the difficult art of anatomical thinking in diagnosis. Therefore, unless a man asks himself in any given case of nucho-acromio-brachial pain the question: "Can the pain here be a referred pain? and, if it can, from what organ or organs can it be referred?" he will escape diagnostic shipwreck only by a miracle. The writer can truly say that in the course of a very large clinical experience of thirty years he has never seen any clinician examine a case of pain in neck, shoulder, or upper arm from the standpoint of the sensory phrenic. And yet this is what every clinician should do in every case; for, if there be any organic affection involving the sensory phrenic, it is his duty to look for it, and to look for it in several organs.

(h) *The Writer's Case of Puerperal Shoulder-Pain of Phrenic Origin.*—In order to show how difficult the diagnosis may be in some of these cases, and virtually impossible to any one who either does not know of, or forgets, the existence of a sensory phrenic, I relate the following case. Here anatomical knowledge and its clinical application led me at once to the correct diagnosis:—

In December 1896 the wife of a medical relative of mine, then aged forty, gave birth to her fourth child : eleven years had then passed since the birth of her third child. A week or so after the fourth confinement her husband happened to write to me, and incidentally mentioned that she was going on well except for a severe persistent pain in one shoulder, for which neither he nor his partner could account. I had long known both of them to be careful clinicians : I also remembered that the patient had had pleuro-pneumonia more than fifteen years previously. In replying, therefore, to the husband, I pointed out that the shoulder-pain was a referred phrenic pain from some awakened activity of her old basal pleuritic adhesions. I mentioned the work of Ferguson and others on the sensory phrenic. In this case, doubtless, the exciting cause was the puerperal state, aided by the mental anxiety caused to a lady by child-birth at the age of forty : it was added to by the fact that for eleven years she had had no experience of child-birth, and we all know how over-anxious most women are at the bare thought of the puerperal ordeal at forty. The sequel of my case is instructive :—I had suggested local measures over the region of the diaphragm. A few days later the reply came that the pain had subsided spontaneously before my advice could be tried. Fortunately these cases do often end favourably, as hers did. She has kept well, and remains well at the age of fifty-four.

We can readily understand that local applications over the seat of pain in this case would have failed to give relief : the same thing applies, of course, to brachial pains of phrenic origin. It is quite different, however, with cases of neck pains of phrenic origin : in such cases both the patient and the physician would naturally apply local treatment to the neck, *i.e.* over the situation of those cervical root ganglia that are constantly receiving painful impulses from the particular phrenic organ or organs involved by the morbid process. One can hardly doubt that in the past the phrenic-organ origin of pains in the neck must have been often missed by clinicians : for the local measures to the neck have given relief (as they did in Ross' case of pleuro-pneumonia with severe shoulder pains), and the case is dismissed as a local neck neuralgia. We must remember that when phrenic pains occur in the subjects of old pleuro-pneumonia they often do so—under the influence of psychical or physical stress or trauma, exposure to cold, privation, bad feeding, or anything that impairs the general health—many years after the initial lesion of the sensory phrenic organ ; and therefore we must not expect to get always acute symptoms, such as dyspnœa, tachycardia, cough, etc., etc. In all such cases we ought to apply local applications in two situations, *viz.* : (1) over

the situation of the third to sixth cervical root ganglia, (2) over the inflamed or affected viscus.

One point may be here mentioned, viz., that the majority of cases of pleurisy, peritonitis, pericarditis, angina pectoris, hepatic and supra-renal affections, etc., do not give phrenic pains: the reason is obvious. All these structures have a double innervation, and usually the phrenic innervation is the smaller of the two.

(i) *Some Passages from the Writings of James Mackenzie.*—

In 1893 Mackenzie wrote¹ that "in several cases of basal pneumonia and pleurisy, limited to the lower margin of the lungs, he has found not only shoulder pain, but also a distinct field of hyperæsthesia on the shoulder"; he attributed this to the accompanying diaphragmatic pleurisy, but adds that it "may be due to the vagus terminations being involved by the inflammation of the lungs." This seems to me highly improbable. He also throws out the suggestion, on p. 337, that "the pain, even of pericarditis, may be due to the invasion of the muscular tissue of the heart by the inflammation." More recently, 1908, he writes, in his book on "Diseases of the Heart," of pericarditis as "essentially a painless complaint"; also "when pains are associated with its presence it will be invariably found that there is evidence of a myocardial affection." In a book written in 1909² he has a striking passage, which confirms a piece of my own experience, which I will give presently under another heading, thus:

"In gall-stone disease shoulder pain is a not infrequent complaint, and the pain may extend from the top of the shoulder and down the outside of the upper arm. *It may persist here with such severity that the causal condition may be overlooked, and the case looked on as one of neuritis.*³ The expulsion of a gall-stone may be followed by instant and permanent relief."

(i) *Supra-renal Tumours.*—(1) In 1899 Otto Ramsay⁴ studied sixty-seven recorded cases: he found many of the records very meagre; in twenty-five he found complaint of pain in the

¹ *Brain*, Vol. xvi., 1893, p. 339.

² "Symptoms and their Interpretation," London, 1909, p. 45.

³ Italics mine.

⁴ *Bull. Johns Hopkins Hosp.*, Vol. x., 1899, p. 20.

following situations:—(1) One or other renal region behind, (2) over whole back, extending upwards into shoulders or downwards into thighs, (3) epigastrium and hypochondriac regions: several had marked tenderness in epigastrium or over the tumour. (It is interesting to note here that J. Ransohoff¹ states that “when a supra-renal tumour can be felt at all, it appears in the epigastric region; it differs in position from the renal tumour.”)

(2) Quite soon after Ramsay's paper appeared, Mayo Robson (10) published three excellent cases of such tumours, in all of which shoulder-tip pain was present. They are so instructive that they must be given here:

Robson's Case 1.—Two years before Robson saw the patient, a woman of forty-seven, married, she had suffered from paroxysmal attacks of pain over liver and right shoulder-tip, accompanied by sickness and headache; never jaundice; no urinary trouble throughout. Early in March 1891 (*i.e.* two years after onset) a swelling was noticed below costal margin: only one attack of pain occurred during the next three weeks. Robson saw her first on March 23, 1891; removed a “sarcoma originating in right supra-renal capsule and invading top of kidney secondarily.” Death from exhaustion one month later.

In connection with this case, I think it is probable that, had Robson seen the patient two years earlier, he would by anatomical reasoning have suspected the supra-renal, have operated then, and saved life. For there is only one single lesion that could cause a combination of paroxysmal pains over liver and right shoulder-tip, *viz.*, one that is involving the right phrenic nerve (its sensory components) below the diaphragm.

(3) [It is important to remember that several successful cases of removal of a supra-renal tumour have been recorded; thus A. F. Jonas² recorded one in 1898. He urges the necessity of early operation if the existence of a tumour can be recognised early. It is evident that cases of supra-renal tumours presenting shoulder-tip pains are much easier to diagnose than cases showing none, *i.e.* to any clinician who bears in mind that the phrenic is partly a sensory nerve. Then, again, an abstract of a successful case of removal will be found in the *British Medical*

¹ “Keen's Surgery,” Philadelphia, 1908, Vol. iv., p. 271.

² “Annals of Surgery,” Vol. xxvii., April 1898, pp. 436-447.

Journal for December 23, 1905 ("Epitome," p. 99, No. 400 : the case was published by Heidemann.¹ It is stated that Wendel collected twenty-four cases, published in 1904. Heidemann's case was a woman, fifty-two ; tumour visible on inspection in right loin ; removal by abdominal nephrectomy ; recovery of health. Tumour was tuberculous.]

Robson's Case 2.—He operated on her twice, viz. : (1) in 1893, cholecystotomy (she remained well till 1896), (2) in December 1897. One year before second operation the patient, now aged sixty-two, noticed spasmodic pains and indigestion : "the pain passed to right shoulder-tip and down the inner side of right arm" (not stated how far). Operation showed a tumour of right supra-renal, the size of a small orange. Recovery. Patient was well in 1899, two years after operation.

Robson's Case 3.—One which he watched for some months in 1875. He writes that "during the last three months of the patient's life the pain was referred to the left loin and shoulder-tip, and not to the hip or thigh as at first." Robson's paper concludes with an excellent review of the symptomatology of these tumours.

The anatomical bearing of his three cases is of much interest : it might be urged that, since the fourth and fifth cervical areas (and probably sixth, as in his Case 2) are involved in at any rate some cases of supra-renal lesions, the sensory phrenic fibres which go to the supra-renal rise in cells of these cervical root ganglia ; but we must bear in mind that other sensory phrenic neurones, such as the hepatic and peritoneal, may be sometimes secondarily involved. The ultimate proof of the exact ganglionic origin of the supra-renal phrenic neurones will, of course, be given by experimental methods.

(4) Some writers consider the symptoms of supra-renal lesions vague. Thus, Terrier and Lecène,² find the symptoms vague, and the diagnosis usually difficult or impossible : they are writing here on supra-renal cysts.

(5) Again, H. D. Rolleston³ writes thus concerning primary malignant disease of these glands : "Rare : some of the cases so described were very probably examples of hæmorrhagic adenomata. In a recent investigation into all the available recorded cases, Dr Marks and I could find only sixteen undoubted instances. The criteria of malignancy that we employed were the invasion of adjacent parts or the presence of secondary growths. To these we were able to

¹ *Monats. f. Geb. u. Gyn.*, Sept. 1905.

² *Rev. de Chirurg.*, 1906, No. 9. (Abstract in *Brit. Med. Journ.*, Feb. 9, 1907, "Epitome," p. 22.)

³ "Encyclop. and Dictionary of Med. and Surgery," Edinburgh, 1906, Vol. i., p. 73, col. 2. (Article on "Adrenal Glands.")

add ten previously unpublished cases, making twenty-six in all." In writing on malignant tumours arising in accessory supra-renals and in adrenal "rests," he says on p. 74: "Clinically these tumours cannot be differentiated from renal growths. On a review of the symptoms and physical signs it does not appear that there is any reliable method of certainly distinguishing between them. In some exceptional cases excessive growth of hair has been noticed, especially, but not exclusively, in young subjects with primary malignant disease of the adrenals."

These remarks of Rolleston are too pessimistic; we have abundant evidence that we have in the presence of shoulder-tip pain in some cases of supra-renal lesions a sure indication of sensory phrenic involvement. Once the physician and surgeon have got so far as the sensory phrenic an exploratory operation and probably successful removal follows as a matter of course.

We learn from Robson's Case 3 that phrenic sensory neurone involvement may occur late in the development of these tumours: it is clear that, in the case of lesions of any of the organs of the afferent phrenic, the chances are that phrenic involvement will be less common than involvement of other nerves that supply these organs (pleura, pericardium, supra-renal, etc., etc.). The phrenic has usually a much smaller area than that of these other nerves; but we must never forget that phrenic involvement may be the earliest sign, and in the case of a supra-renal tumour an early diagnosis means early operation and probably the saving of the patient's life.

(k) *The Sensory Phrenic and Shoulder Arthritis.*—The writer has already mentioned a case of puerperal shoulder-pain in a woman occurring acutely at least fifteen years after a pleuropneumonia; in her case there was no arthritis present. But he has seen an association of shoulder arthritis and sensory phrenic organ involvement, chiefly of the afferent diaphragmatic neurones. Our knowledge of arthritis is still very imperfect, especially as to causation; but we can hardly doubt that in a patient who has basal pleuritic adhesions, even of ancient date, the constant stream of excessive impulses passing up the branches of the sensory phrenic, especially at times of mental or physical strain or of relatively poor health from all sorts of causes, does often predispose towards the determination of a shoulder arthritis. In such a case the sensory phrenic is practically never thought of: naturally, therefore, unless the patient should happen to

mention his old diaphragmatic pleurisy, the physician fails to look for (and therefore to find) the old thoracic mischief. We ought to pay attention to the sensory phrenic in every case of shoulder arthritis: should we fail to find any evidence of its involvement, we shall at least have acted like rational beings.

A relationship between shoulder arthritis and hiccough has been recorded. I myself have seen some evidence that points to the probability that patients who show evidence of sensory phrenic involvement are unduly liable to hiccough. But I lay no great stress on the point. One thing I do say, however—that I think the rôle of the vagus in the production of hiccough has been almost as much over-emphasized as that of the sensory phrenic has been under-emphasized, or—more correctly speaking—ignored.

(l) *The Sensory Phrenic and Diaphragmatic Tics, and certain other Shoulder and Upper Arm Tics.*—We are all agreed to-day that the tics are essentially psychical phenomena; but we admit that they are often, perhaps indeed always, initiated by some local irritation; we are not sure that the area irritated is of necessity the same area from which the muscles involved in the tic are innervated; but usually it is either that area or one very near it. Now, so far as I know, no one has ever suggested that the sensory phrenic may play a part in initiating a diaphragmatic tic; but it seems to me most reasonable to suppose that it may. Thus, given a neuropath (or, more strictly, a psychopath) of the ticqueur diathesis, it seems likely that a lesion of any of the organs of the sensory phrenic—the commonest is the diaphragmatic pleura—is admirably fitted to set him off in the direction of a diaphragmatic tic. The cases I have seen in Great Britain are of the clonic “vocalised hiccoughing” type—I know no way of describing them better; and they are not common in that country. Still, I have seen a fair number of these, but most have been seen in the streets and public vehicles and assemblies, and very few in private or hospital practice, and nearly all have been women. If one comes across such a case in public places one usually hears the ticqueur before one sees her. It is about five years since I saw my latest case in hospital. Unfortunately I had no opportunity of examining the patient’s sensory phrenic organs for evidence of past or present disease; but I spoke about the subject

afterwards to the physician in charge of the case, and he recognised the possible importance of the subject then.

But certainly a careful thoracic and abdominal examination should be made in every case of a diaphragmatic tic: if there be anything amiss in the organs of the sensory phrenic, it is our function to discover it and treat it. If we find, for instance, evidence of basal pleuritic adhesions—it may be of quite ancient date—we are greatly helped in our general hygienic and dietetic management of the patient. In order to show that apparently the rôle of the sensory phrenic has been hitherto quite missed in these cases, I may mention that all that even Meige and Feindel can tell us in their recent book¹ on tics, by far the best book ever written on tics, is that “tics of vomiting may be produced if the diaphragm be affected.” In connection with this passage we may recall Gueneau de Mussy’s (5) remarks on the vomitings of diaphragmatic pleurisy, to which I have previously referred.

But there is another possibility in connection with tics initiated, or directed, by the sensory phrenic. The cases of shoulder tics are common, such as shrugging the shoulders, or that of abduction of the upper arm. Such movements as these may quite well be sometimes started on the basis of an old diaphragmatic pleurisy or peritonitis. Here again we should systematically examine thorax and abdomen in every such case.

On the interesting question of a possible relationship of the sensory phrenic to some cases of angina pectoris, I prefer to say nothing here, for our knowledge of this group of cases is still very obscure. But it has been known from the time of Peter (1871) that in some cases of angina pectoris shoulder-pain is met with.

(m) *Does Tabes sometimes involve Sensory Phrenic Neurones?*—Almost certainly yes, but comparatively rarely, and then usually in cervical tabes. Although my experience of the disease has been exceptionally large, I have seldom seen pains in neck, shoulder, or upper arm. Of course the presence of these would not *per se* prove involvement of afferent phrenic neurones, but merely of the root areas of the third, fourth, fifth, and perhaps sixth cervical ganglia. But we can hardly reasonably doubt that

¹ “Tics and their Treatment,” translated by S. A. K. Wilson, London, 1907, p. 203.

afferent phrenic neurones are sometimes involved. How, then, would this be shown? Firstly, by pains in cervical root areas of skin or joint. Secondly, it is probable that there is in these cases an alteration in the level and the tonicity of the diaphragm, as seen by that increasingly useful instrument, the orthodiagraph.¹ This instrument needs great skill in the study of the movements of the diaphragm, and so far I have seen no published work on the orthodiagraphic study of the tabetic diaphragm, a subject well worthy of attention. One sees also occasionally, of course, some degree of hypalgesia in these cervical root areas from third to sixth, but in my experience many cases of even cervical tabes have failed to show this.

(n) *The Involvement of Afferent Phrenic Neurones in Herpes of third to sixth Cervical Root Areas.*—This is another aspect of the sensory phrenic that has been quite missed by all previous writers: it is of scientific interest only. Clearly, since herpes depends usually on a gross inflammatory lesion of dorsal root ganglia, afferent phrenic neurones must be affected in these cases, in part at any rate. Of course the complete involvement of all the afferent phrenic neurones would be found only in the very rare condition of a herpes involving the third to sixth cervical ganglia on one side (bilateral herpes is exceedingly rare). How could we prove that afferent phrenic neurones were affected? Pain would not necessarily prove it, for this might be due to affection of cutaneous neurones. But in any case of complete herpes of any of these four cervical ganglia we know that afferent phrenic neurones must be involved. It is probable that phrenic involvement could be proved in cases of herpes of these ganglia by means of the orthodiagraph: we should have here a strangling of some or all of the diaphragmatic muscle-afferents: this would result in hypotonia of that half of the diaphragm: its level would differ from that of the unaffected half of the muscle: and it is possible that the movements of the affected half would be in-co-ordinate and less in extent than those of the sound half.

¹ The only study of the diaphragm by the orthodiagraph known to me is that by J. F. Halls Dally in *Journ. of Anat. and Physiol.*, Oct. 1908, p. 93.

Drs Claytor and Merrill have published valuable papers, on its value in the study of the normal and abnormal heart and great vessels, in *Amer. Journ. Med. Sci.*, for Oct. 1909 and Oct. 1910, with many figures. In the former paper they describe the technique.

One point is important, viz., that since the diaphragm is probably the most difficult of all the organs to study by the orthodiagraph, the research must be carried out by very skilled and practised operators.

(o) *Thoracic Aneurysm and the Sensory Phrenic.*—Quite apart from the fact that aneurysm may involve the sensory phrenic neurones by pressure on the trunk of the phrenic nerve, it may do so without causing any motor palsy of the diaphragm by involving sensory phrenic neurones alone, without any involvement of motor phrenic neurones. Peter (1871) was the first to record the association of thoracic aneurysm and the involvement of the sensory phrenic. A recent article by H. L. Tidy,¹ founded largely on Henry Head's teaching, brings out the facts that (1) in aneurysm of the arch of the aorta the third and fourth cervical areas are liable to involvement, together with the first four thoracic areas; (2) in aneurysm situated just above the sinuses of Valsalva right shoulder pain may occur; (3) in one of the transverse parts of the arch left shoulder pain; (4) aneurysm arising from commencement of transverse arch to right of sternum causes pain—(a) over sternum, (b) commonly over left shoulder, (c) less commonly right shoulder and arm; (5) origin from summit of arch gives pain in back of neck and shoulders, and sometimes throat; (6) aneurysms arising below entry of ductus arteriosus do not cause pain in upper limb or shoulder.

(p) *The Question of Visceral Sensibility.*—A study of the afferent phrenic nerve necessitates a brief reference to this hotly-debated question. All that I need say is that among those who hold that the viscera proper are insensitive to all forms of stimuli are James Mackenzie, Lennander, and Ramström; while the viscera are held to be sensitive by Kast and Meltzer, Ritter, and Nyström. We know that pain is common in visceral disorders, so that from a clinical point of view Mackenzie's term "visceral" pain for referred pain may be allowed to pass unchallenged. Recent researches² have shown that the branches of the phrenic nerve to the pleura are really distributed, to the extra-pleural tissue and not to the pleura itself: these lower phrenic branches

¹ *The Practitioner*, London, Vol. lxxxii., May 1909, pp. 667-691, "Thoracic Aneurysm."

² See H. M. Johnston, in *Brit. Med. Journ.*, Sept. 11, 1909, pp. 685-686, "Note on Distribution of the Intercostal Nerves."



are very fine. Johnston adopted a special method of dissection, which he describes, and he also employed microscopical methods on which he lays rightly great stress. In connection with the question of nerves to the pleura itself, it is interesting to note that, so far back as 1893, Mackenzie stated¹ that he failed to find, on careful dissection of several intercostal nerves, that even a single filament went to the parietal pleura. Again, Ramström found, by histological examination of the nerves of the abdominal wall, that the loose layer of connective tissue lying immediately outside the peritoneum is very freely supplied by nerves and nerve-endings from the intercostal nerves: they are sensitive to pain. But the serous layer of the peritoneum is supplied by sympathetic nerves and is insensitive to ordinary stimuli.

On the whole, therefore, the evidence suggests that the viscera and serous membranes themselves are insensitive, but their extra-visceral connective tissues are sensitive; and when visceral disease causes pain it does so by involvement of nerves distributed to these connective tissues.²

(r) *The Root-areas involved in Diseases of the Sensory Phrenic Organs.*—By common consent the fourth cervical cutaneo-arthritic area is much more often affected than any of the others. Next in frequency comes the third, then the fifth, then the sixth (and possibly lower ones very rarely in man). It so happens that the only ones I have seen affected are the fourth and fifth. But, all the same, the third is much more often affected than the fifth. I have previously shown in this paper that our knowledge of the exact ganglionic origin of the various afferent phrenic fibres is very imperfect. All that we know to-day is that the muscle-afferents of the diaphragm rise in the third to sixth cervical root ganglia (Sano). The phrenic afferent fibres are: (1) somatic afferent to diaphragm (since the diaphragm is developed from cervical myotomes it is somatic); (2) splanchnic afferent to—(a) pleura, (b) pericardium, (c)? right auricle, (d) peritoneum covering liver, (e) supra-renal.

Finally, it is possible that the right auricular branch may

¹ *Brain*, Vol. xvi., p. 339.

² Since this paper was written, A. F. Hertz has shown (1911) that in man the intestinal walls have a true muscle-pain sense (see *Lancet*, Vol. i., 1911, pp. 1051, 1119, 1187).

contain, either partly or wholly, splanchnic efferent fibres. This can be determined only by experimental methods.

(s) *Summary of Clinical Conditions in which the Afferent Portion of the Phrenic Nerve plays, or may play, a Part.*

Group A is given under authors' names, in chronological order.

Group B comprises rarer conditions. An asterisk signifies that the writer is, so far as he knows, responsible for the suggestion.

- A. 1. Hippocrates. Association of sub-diaphragmatic and clavicular pains.
2. Galen. (a) Cervical pains accompanying certain hepatic conditions; (b) probably Galen knew of the existence of the right auricular branch of the right phrenic nerve.
3. Bouillaud (1835). (a) Pericarditis; (b) cardiac neuralgias.
4. Gueneau de Mussy (1853). (a) Pericarditis; (b) diaphragmatic pleurisy; (c) general pleurisy; (d) hepatitis; (e) "rheumatism" of diaphragm.
5. Peter (1871). (a) Pericarditis; (b) diaphragmatic pleurisy; (c) "rheumatism" of diaphragm; (d) angina pectoris; (e) cardio-aortic affections, both with and without exophthalmic goitre; (f) thoracic aneurysm; (g) hepatic colic; (h) diaphragmitis. (The writer of this essay thinks that in some cases of diaphragmatic pleurisy and peritonitis there is probably added a true neuro-myositis of the diaphragm and its muscle-afferent nerves); (i) diaphragmatic peritonitis; (j) splenic enlargements, chiefly malarial. (Peter was the first writer to state definitely that the phrenic is a mixed nerve); (k) diaphragmatic and phrenic neuralgia.
6. Ross (1888). Borrowed almost everything from Peter and the latter's predecessors. The one exception appears to be abscess of liver.
7. Ferguson (1891). Hepatic abscess.
8. Mayo Robson (1899). Supra-renal tumours.

[The writer of this essay has failed to find who was the first author to describe the association of shoulder or arm pain with supra-renal lesions.]

B. Shoulder-tip pain has been noted in the first five following conditions:—

- (1) Acute cholecystitis (quite apart from the passage of gall-stones, in which condition acute cholecystitis is believed to be usually present).
- (2) Appendicitis.
- (3) Carcinoma of liver.
- (4) Carcinoma of pancreas (secondary involvement of afferent phrenic neurones).
- (5) Ruptured duodenal ulcer. Only one such case is known to the

writer to have caused right shoulder pain, viz., that recorded by J. Morton in *Brit. Med. Journ.*, Jan. 29, 1910, p. 251 (Case 10). Here operation showed a perforation on anterior duodenal wall, just beyond the pylorus. Recovery.

- (6) Some cases of shoulder arthritis.*
- (7) Some cases of nucho-acromio-brachial neuralgia and "neuritis."* (It will be remembered that Mackenzie noted that in gall-stone disease acromio-brachial pain might persist, so that the causal condition is overlooked, and the case considered one of "neuritis." But the writer had arrived at the opinion that brachial neuralgia and so-called neuritis is sometimes of sensory phrenic origin many years before Mackenzie wrote (1909) that passage.)
- (8) Sometimes in the initial stage of diaphragmatic tics,* and also shoulder muscle tics.
- (9) Rarely in tabes dorsalis.*
- (10) Herpes of third to sixth cervical ganglia.*

(t) REFERENCES.

- 1. Hippocrates. Quoted by Gueneau de Mussy (5).
- 2. Galen. *Ibid.*
- 3. Bouillaud, M. "Traité clinique des maladies du cœur," 2 vols. Paris, 1835.
- 4. Luschka, H. (a) "Der Nervus Phrenicus des Menschens," Tübingen, 1853. (b) "Anatomie des Menschen," Tübingen, 1863.
- 5. Gueneau de Mussy, Noel. "Études sur la Pleurésie Diaphragmatique," *Archives Générales de Méd.*, 1853, Tome ii., pp. 271-284.
- 6. Peter, Michel. "Nevralgie Diaphragmatique," *Archives Générales de Méd.*, 1871, vi série, Tome xvii., pp. 303-348.
- 7. Pansini, S. "Du Plexus et des Ganglions propres au Diaphragme." Note Histologique. (No figures.) *Archives Ital. de Biologie*, 1888, Vol. x., pp. 259-266.
- 8. Ross, James. "The Segmental Distribution of Sensory Disorders," *Brain*, 1888, Vol. x., pp. 333-361.
- 9. Ferguson, John. "The Phrenic Nerve," *Brain*, 1891, Vol. xiv., pp. 282-283.
- 10. Robson, A. W. Mayo. "Three Cases of Removal of Supra-renal Capsules," *Brit. Med. Journ.*, 1899, Vol. ii., pp. 1100-1101.

THE USE OF SALVARSAN IN MENTAL DISEASES.

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(With Plates 31-35.)

THIS short paper is intended to show the results of the use of salvarsan in seventeen cases of mental disease of a syphilitic, "parasyphilitic," and non-syphilitic nature. The cases in which the drug was employed consisted of one case of insanity of syphilitic brain disease, five cases of general paralysis, five cases of dementia præcox, two cases of delirious insanity, two cases of chronic delusional insanity, and one each of acute melancholia and acute mania.

Cerebral Syphilis.

CASE I.—The patient with syphilitic brain disease—a man aged 41, who had contracted the disease eleven years ago—presented the following bodily symptoms:—There was persistent shaking of the head from side to side; marked intention tremor and inco-ordination of the right arm and leg; inability to write with his right hand; pronounced fibrillary tremor of the tongue; speech was thick and slurring; pupils were unequal and reacted sluggishly to light and accommodation; knee jerks, especially the right one, were exaggerated. These symptoms had been present for about eight years.

He was confused in mind; his emotional condition varied from one of well-being to one of depression; he was inclined to be very irritable, childish, and restless.

He received an intravenous injection of .2 grm., followed in seventeen days by a second dose of .1 grm.

On the evening of the first injection his temperature rose from 97° to 100.4°. On the following day it was 98.6°, and after this it remained normal. After the second dose it reached 99°. The leucocytes increased from 10,000 to 12,200 six hours after the first injection. On the second day they had fallen to 8000, but on the fourth day they had risen to 10,000.

The blood pressure fell from 102 to 92 on the first day, but on the third day it was 104, while on the ninth day it was 124. On the thirteenth the pressure had reached 126, and after this it gradually fell. No increase was found subsequent to the second injection.

The improvement in this patient has been most marked. The tremor of the head is very much less than before treatment. He is now able to write well with his right hand—this he has been unable to do for eight years—and the writing with his left hand is much better formed than before. His speech is quite distinct, and he

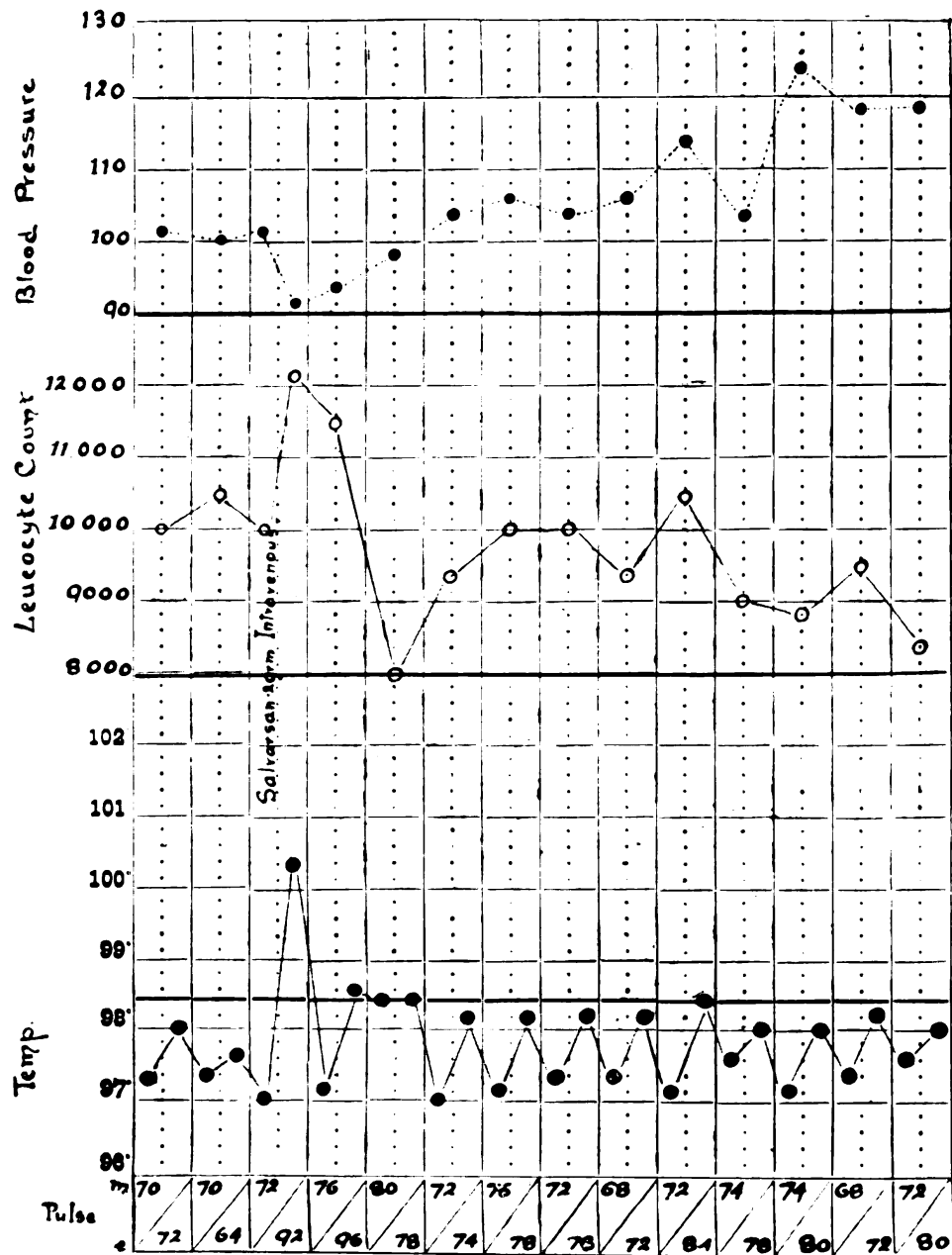


CHART OF CASE I - CEREBRAL SYPHILIS.

To illustrate Dr Dods Brown's Paper.

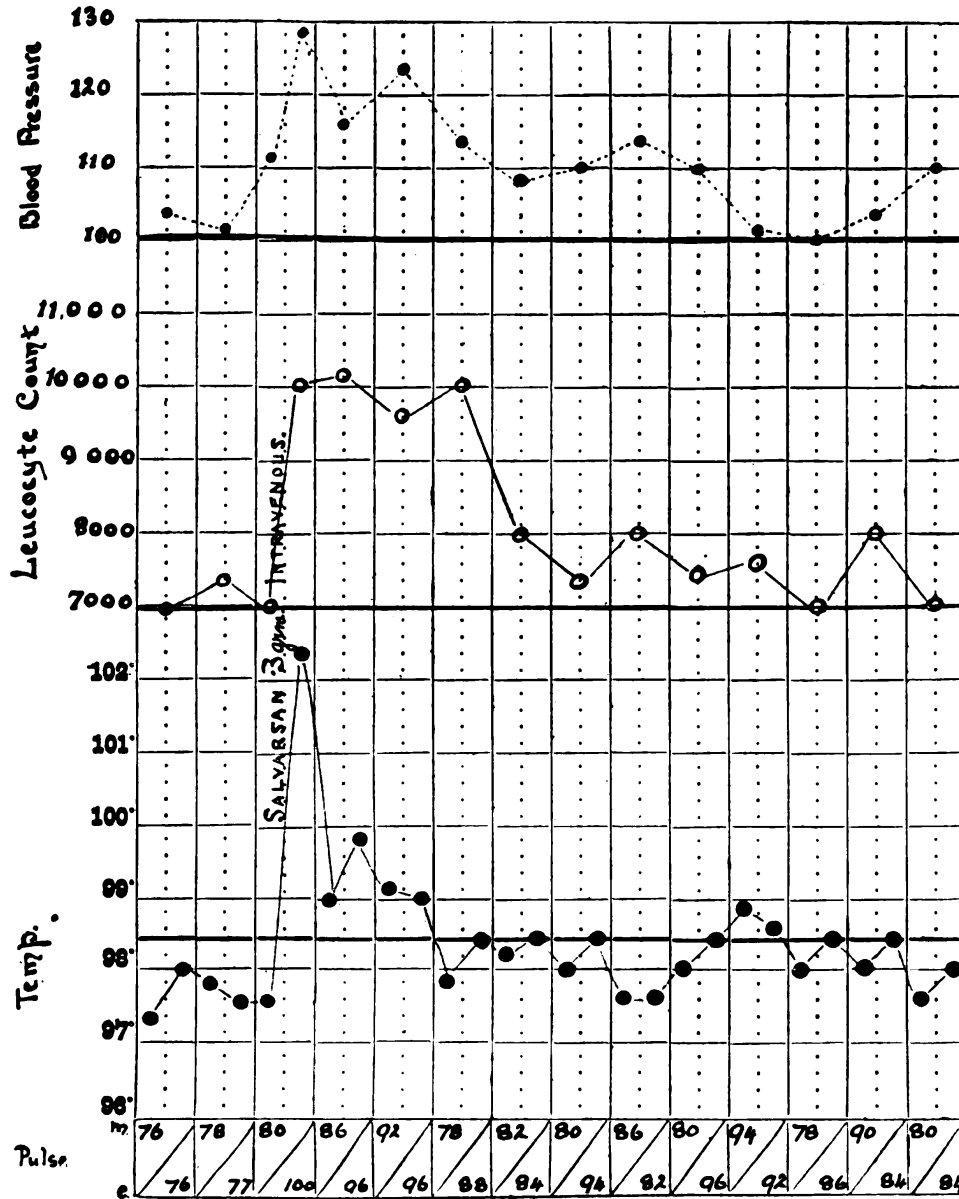


CHART OF CASE III, GENERAL PARALYSIS

To illustrate Dr Dods Brown's Paper.

exhibits no irritability and less facility, while his pupils show nothing abnormal. It is of interest to note that the number of lymphocytes in the cerebro-spinal fluid was reduced from 30 to 7.6 per cmm. after the injection. There was no reduction of the amount of proteids. The benefit derived in this case has been more pronounced than in any of those treated.

General Paralysis.

Of the five cases of general paralysis, three were treated by the intravenous method and two by the intramuscular method.

CASE II.—A man, aged 45, with all the physical signs of the disease and suffering from acute excitement and expansive delusions. He received two intramuscular injections, each of .3 gm., the second being given six weeks after the first. The motor and mental excitement rapidly decreased and the delusions disappeared after the first dose. In four weeks after the second injection he was able to leave the asylum. The pupil signs were then present to a slight degree, but there was no other evidence of the disease, except a positive Wassermann reaction given by the blood.

CASE III.—A man, aged 40, who exhibited some mental enfeeblement with delusions. He was restless, irritable, and difficult to manage. Each dose given intravenously consisted of .3 gm., the second being given fifteen days after the first. He became clearer mentally, and much more restful and contented, and his bodily health improved. Later, however, he developed a slight apoplectiform seizure with confusion. This persisted for about ten days, when he became quiet, cheerful, and better in his mental health than before treatment.

His serum and cerebro-spinal fluid gave a positive Wassermann reaction two months after treatment. The cells of the spinal fluid showed a reduction from 16.8 to 7.8 per cmm. The amount of proteid was unchanged.

CASE IV.—A man, aged 37, who was acutely excited, noisy, and delusional. On account of his restlessness, intravenous administration could not be adopted. The first dose was .6 gm., and the second, given sixteen days later, was .3 gm. There has been no obvious change as far as his mental symptoms are concerned, but his general health has improved. In this case also the lymphocytes, which numbered 40 per cmm. before treatment, were found to be 7.6 after the second dose had been administered. The proteids remained unchanged.

CASE V.—A quiet, slightly demented man, aged 39. He received two doses of .3 gm. He improved somewhat, and his wife stated that she had never seen him so well during the last two years. Later, however, he became slightly confused, but this was only temporary. Now his mental state shows no change from what it was before treatment was begun. His blood and cerebro-spinal fluid still give a positive Wassermann reaction, but not so markedly as before salvarsan was given.

CASE VI.—A man, aged 38, suffering from great mental confusion and depression; the physical signs of the disease were distinctly present. The cerebro-spinal fluid had a lymphocytosis and increased amount of proteid, and this fluid as well as the serum gave a positive Wassermann reaction. The dose of salvarsan given was .3 gm.

One month after the drug was administered the spinal fluid showed a slight reduction in the number of lymphocytes, but a positive Wassermann reaction was still obtained. The blood also gave a similar reaction.

There has been slight physical but no mental improvement in this patient.

In two of these cases there was a definite temperature reaction. In Case III. the temperature rose from 97.6° to 102.4° six hours after the first injection, and on the following day it was 99.8° . In Case IV. it was 99.4° on the day after the drug was given.

In the three remaining cases the temperature did not rise higher than 99° .

In each of the five general paralytics there was a leucocytosis present after each injection, the highest count being a rise from 8000 to 12,000 in Case III. after the second dose. The increase in the white corpuscles was obtained in some instances on the day of the injection, but in others it was not found until the third day.

The blood pressure rose in all of the five patients. The highest reading occurred in Case V., in which the pressure before the salvarsan was administered was 126. Six hours after the injection it was 136. On the following day it had reached 146, and on the third day the pressure was found to be 148. After this it varied between 120 and 142.

In Case III., after the second dose the pressure rose from 108 to 128 on the first night. It varied between 114 and 122 until the sixth day, when it registered 136, after which it fell to 112.

Treatment by salvarsan in this class of disease does not seem to give any definite favourable result. Two cases have shown no mental improvement, and, indeed, in one case the symptoms were aggravated temporarily, although for a short time, soon after treatment, he did appear to be somewhat better.

Three patients have made distinct improvement, apparently as a result of treatment, but whether the benefit derived is

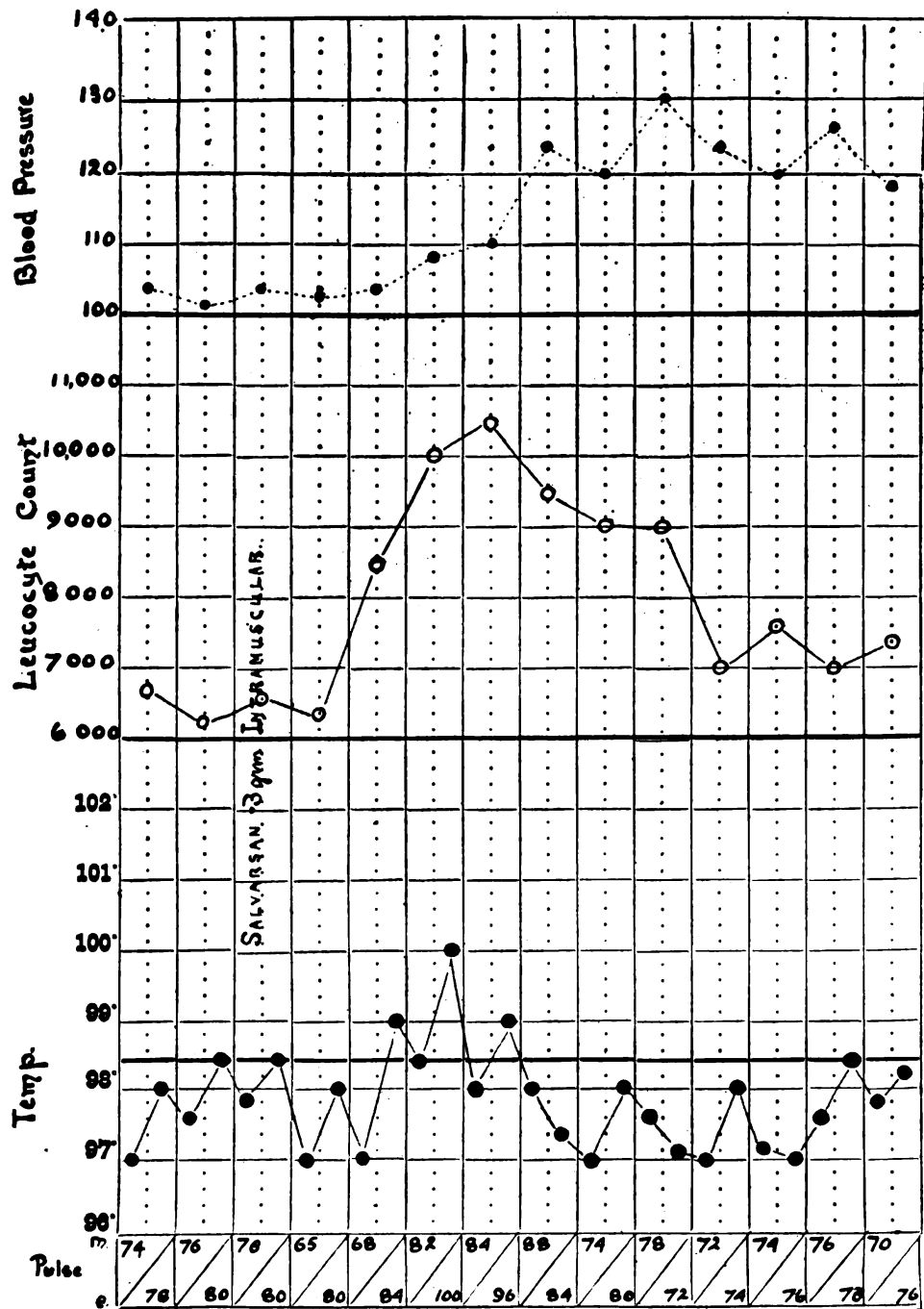


CHART OF CASE VII. DEMENTIA PRAE

To illustrate Dr Dods Brown's Paper.

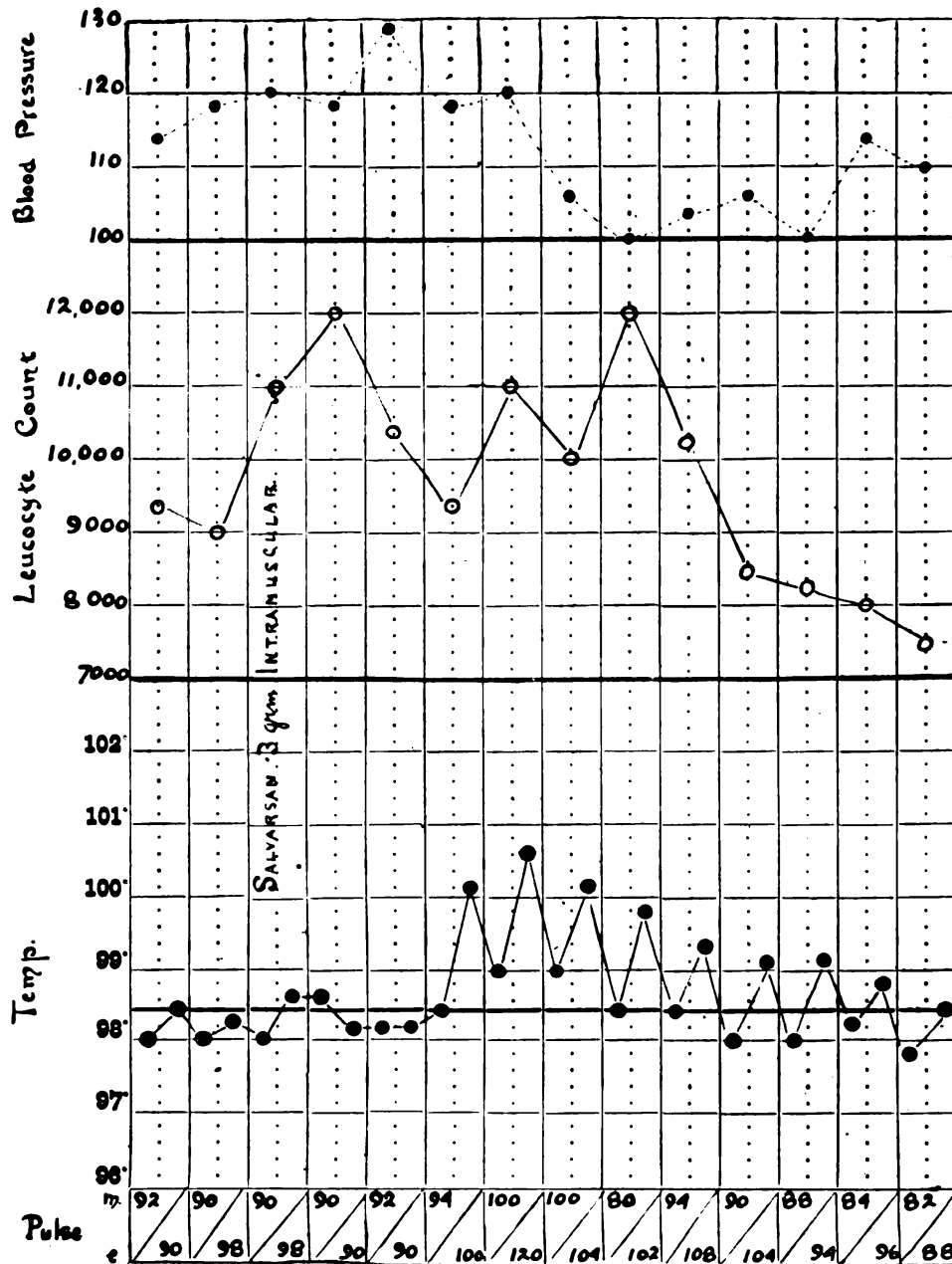


CHART OF CASE IX: DEMENTIA PARVA

To illustrate Dr Dods Brown's Paper.

secondary to a physical change or not, or whether permanent or not, it is impossible to say.

The use of the drug in these five cases does not appear to have had any influence on the presence of the Wassermann reaction obtained in the serum and the cerebro-spinal fluid, and on this account one is doubtful if the improvement will be long maintained.

The great reduction in the number of the lymphocytes in the spinal fluid is noteworthy and may be of importance.

Dementia Præcox.

Two cases of the catatonic and three of the hebephrenic type of this disease were treated with salvarsan.

CASE VII.—A case of catatonia, exhibiting negativism, muscular tension, and stupor, alternating with catatonic excitement.

The first dose was .3 grm. given intramuscularly, followed in three weeks by .6 grm. intravenously. The temperature rose from normal to 100° on the third day, falling to 99° on the fourth day, and to 98° on the following day.

The leucocyte count in this case was 6300 before the first injection, 10,000 on the third day, and 10,600 on the fourth day, falling then to 7000.

The blood pressure rose from 104 to 108 on the third day, 110 on the fourth, and to 130 on the seventh, falling again to 120 on the ninth day.

The mental symptoms in this man changed after the first administration. He became very excited and impulsive and the mannerisms were more marked. After the second dose he was more restful and answered questions more readily and alertly. He wrote letters to his friends and began to talk rationally. This he had not done for several months.

In three of the four remaining cases of dementia præcox somewhat similar results as regards temperature reaction and leucocyte count were obtained. In one case the white corpuscles rose from 10,000 to 16,200 on the second day. In the fifth case no temperature or leucocyte reaction was obtained.

In three of the patients there was a rise of blood pressure, but in the fourth it fell from 100 to 82 on the second day, and on the following day it was only 96.

In three of the five cases no mental change whatever has been observed, but in the remaining two—one of catatonia and one of hebephrenia—the patients have become more accessible

and responsive than they were before treatment. The bodily condition of each improved considerably.

Mild Delirious Insanity.

CASES XII. AND XIII.—Both of these cases presented the symptoms of mild or subacute delirious insanity. Each received one intravenous dose of .3 gm. of salvarsan. In Case XII. the temperature rose to 99°. No reaction was obtained in the second case, and in neither was any change observed in the leucocyte count or in the blood pressure.

One of these patients was discharged from the asylum within five weeks of receiving the injection, while the second case has improved very considerably.

Melancholia.

CASE XIV.—A case of acute melancholia. 0.3 gm. was administered to him intravenously. There was no temperature reaction. The leucocytes, which numbered 8400 before the injection, fell to 7400 six hours later, but on the second day they were found to be 11,000.

The blood pressure rose from 126 to 144, and remained about 140 for several days. There has been no change in his mental or bodily health.

Acute Mania (Recurrent).

CASE XV.—An intramuscular injection of .3 gm. was given first of all, and this was followed in three weeks by an intravenous dose of the same amount.

After the first of these the temperature rose one degree on the sixth day, and the white blood corpuscles increased from 9000 to 12,700 on the third day. In this case also the pressure rose from 122 to 136, and on the fourth day it stood at 150, after which it gradually fell to 118. An increase was again obtained after the second injection.

It is too early to make any definite report as to the result of treatment in this case, but since the salvarsan was administered she has passed through two acute attacks which have been of shorter duration and of less severity than any experienced during the past two years.

Chronic Delusional Insanity.

CASE XVI.—A man, aged 49, who developed syphilis eighteen years ago and who has many circatrices and gummatous ulcerations on his head, face, and legs. A negative Wassermann reaction was obtained on examining his blood.

Two and a half years ago he began to express delusions of a persecutory nature. He imagined he was being affected by electric

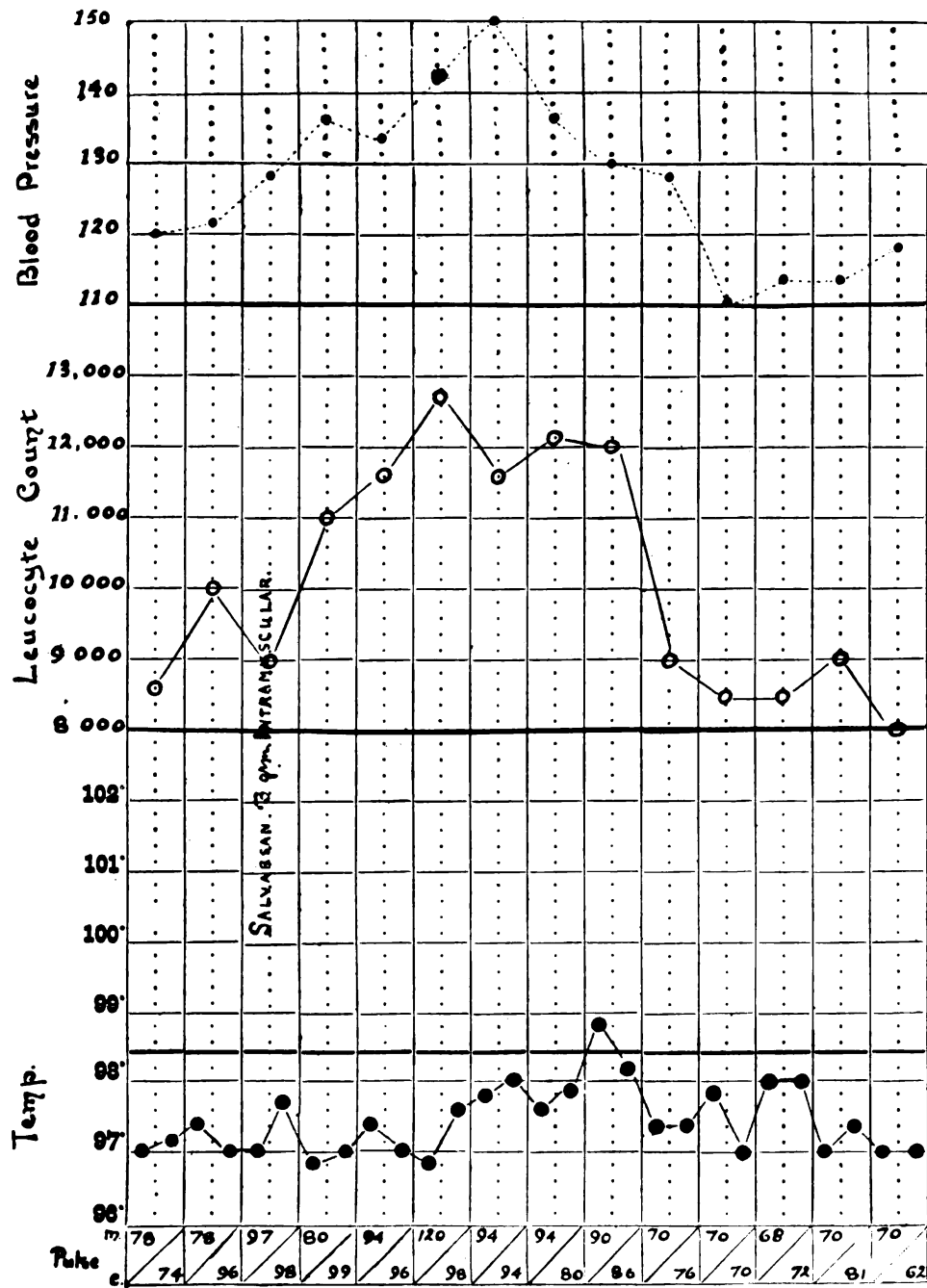


CHART OF CASE XV. ACUTE MANIA.

To illustrate Dr Dods Brown's Paper.

batteries. He also thought he was being hypnotised by some man he did not know. The patient believed that he himself was able to read people's thoughts. He had auditory hallucinations, and he frequently became excited and threatening.

He was given .3 grm. intravenously. There was no temperature reaction, but the leucocytes increased from 6000 to 12,600 on the night of injection. Within ten days he talked more rationally and expressed himself as feeling much better, but unfortunately the improvement has not been maintained.

CASE XVII.—A woman, aged 39, whose father died of general paralysis. She had many delusions of suspicion and persecution and had hallucinations of hearing. The dose given was .3 grm. No reaction of any sort followed. The treatment had no beneficial result.

Three of the patients who received intramuscular injections complained of severe pain in the leg and foot, and in two of them it lasted for about two weeks.

In two cases sickness and vomiting came on after the injection, but it passed off in a few hours. In every case treatment such as one observes prior to a major operation was carried out.

An increase of the red blood corpuscles, amounting to about 500,000, was found to have taken place in four cases within three weeks after treatment.

There was a very marked decrease in the amount of urine excreted in two cases. In one of these it fell from an average of 44 ounces to 16 ounces for four days, and in the second case the patient who had been passing 40 ounces excreted only from 14 to 19 ounces daily for ten days. No abnormal constituents were found.

If these seventeen cases are divided into two classes, the first embracing the cases of cerebral syphilis, general paralysis, and delusional insanity in which there is a definite history of syphilis, and the second consisting of all the other cases of insanity, it is found that as a general rule the former gives a more pronounced temperature reaction and a more definite increase in leucocytes after injection of salvarsan. Notwithstanding this fact, I have not found that these cases which have reacted most have necessarily shown the best results. This is true of the syphilitic as well as the non-syphilitic cases.

The reaction appears more quickly after the intravenous administration of the drug.

Although it is not possible to say that recoveries, such as one obtains in syphilis, have been brought about in these cases of mental disease by this method of treatment, yet definite mental improvement has taken place in some of them, while in the majority the physical health has benefited very considerably.

The most striking result was obtained in the case of cerebral syphilis, and next to this the two cases of delirious insanity benefited to a marked degree. The treatment of the general paralytics was not altogether satisfactory. Only one showed considerable improvement, while in two the mental and physical symptoms were only slightly improved and in the remaining two cases no mental change occurred, but in one of these the physical signs were not so apparent.

Definite improvement was found to follow the use of salvarsan in one case of catatonia and one of hebephrenia, both of whom had been ill for more than eighteen months.

It was interesting to find that in the patient suffering from acute mania the two recurrent attacks of mental excitement, after the drug had been given, were much less severe than any which she had had during the last two years.

I think that the results are such that one is encouraged to make further use of salvarsan in the treatment of mental diseases.

I wish to take this opportunity of thanking Dr G. M. Robertson for his kindness in allowing me to record the results of treatment by salvarsan of patients under his care. My thanks are also due to Dr Borrie for his assistance in administering the drug, and to Dr Winifred Muirhead for examining the blood and cerebro-spinal fluid for the Wassermann reaction of six cases.

Abstracts

ANATOMY.

A CONTRIBUTION TO THE STUDY OF THE CEREBRAL CORTEX (577) IN MAN. E. LINDON MELLUS, *Anat. Rec.*, Vol. v., No. 10, Oct. 20, 1911, p. 473.

THE location of the speech centres in the left hemisphere of the brain, except in left-handed persons, being generally conceded, the author compares the cell lamination of the cerebral cortex of the posterior portion of the third frontal convolution in the right and left hemispheres in three brains, two obtained from cases with no history of mental disease, the third being of unknown origin. A number of figures are given showing the excess in depth of the cell layers of the left hemisphere over the right.

A similar condition was also found in the first and second temporal convolutions.

A. NINIAN BRUCE.

THE CILIARY GANGLION IN THE REPTILES. (*Das Ciliarganglion der Reptilien.*) M. v. LENHOSSEK, *Anat. Anzeig.*, Bd. 40, No. 2-3, Sept. 30, 1911, S. 74. (11 text figures.)

THE author describes here the ciliary ganglion of the lizard, but states that there is no great difference to be found in the ganglion in the different species of reptiles. Cajal's silver method was used.

The ciliary ganglion appears here as an oval swelling on the oculomotor nerve. It is thus an oculomotor ganglion, and gives rise to two ciliary nerves, one of which receives, just at its origin from the ganglion, a bundle of sensory fibres from the fifth nerve. No trace of a sympathetic root was found.

The oculomotor fibres passing to the ganglion are characterised by their great thickness, and each becomes associated with one nerve cell in the ciliary ganglion. None pass through the ganglion. The ciliary nerves all consist of fine fibres. The cells themselves are unipolar, the nucleus is usually eccentric, and at the opposite end of the cell from which the axis cylinder arises. The oculomotor fibres usually are applied to the cell at the region where the axis cylinder process arises, the actual structure being of a somewhat simple type, resembling that found in the embryonic form of the bird. (See this *Review*, Oct. 1911, p. 558.)

A. NINIAN BRUCE.

**FURTHER RESEARCHES ON THE RODS AND CONES OF
(579) VERTEBRATE RETINÆ.** JOHN CAMERON, *Journ. of Anat.*,
Oct. 1911.

THE contents of this paper are confirmatory of observations previously made on amphibian retinae, not only by the author, but also by the late H. M. Bernard. One of the outstanding results of these earlier investigations was that the cones, of amphibian retinae at any rate, represented merely preliminary phases in the formation of rods. This conclusion seemed so absolutely revolutionary that the writer considered it advisable to ascertain if this fact held good for other vertebrate classes. As a result of this extended investigation, the interesting fact is brought to light that the visual elements in all vertebrate classes are consistently cone-shaped structures during their developmental phases. Another striking conclusion is that the embryonic rod and cone elements actually owe their growth to the ingestion of pigment from the hexagonal cell layer—that is to say, both kinds of visual elements, during their embryonic life, appear to perform the rhodopsin function, or something analogous to it. As is well known, the latter function is stated by physiologists to be entirely confined to the rods—a statement which does not accord with the embryonic history of these structures. Further, the results of this research point steadfastly to the fact that the cones of adult retinae are really early stages in the formation of new rods.

Another startling result of these researches was a new interpretation of the nature of the so-called Müllerian "fibres," and it may be added that this was confirmed by Bernard's work. We both came to the independent conclusion that these structures were produced by deposits from streams of metabolised matter from the rods and cones pursuing a tortuous course through the retinal wall. Bernard considered that these "fibres" were entirely produced in this manner; but the writer's observations point to the fact that the core of each of these is derived from the remains to the myelospangium network of the embryonic retina, which forms a sort of basis for the deposit of the material.

AUTHOR'S ABSTRACT.

PHYSIOLOGY.

**FURTHER STUDIES ON THE NATURE OF PARATHYROID
(580) TETANY.** A. J. CARLSON and CLARA JACOBSON, *Amer. Journ.
of Physiol.*, Vol. xxviii., No. iii., June 1, 1911, p. 133.

FROM experiments carried out it seems that measures used to suppress the excitation symptoms of tetany, with the exception

of parathyroid transplantation, are probably due to a decreased excitability, primarily of the nervous tissues. The direct diminution of the excitability is got with calcium and strontium salts, as well as by hypertonicity; indirectly it can be induced by tissue extracts, albumoses, amyl nitrite and stimulation of the depressor nerve, which cause vaso-dilation, and so a diminished flow to the brain.

R. A. KRAUSE.

THE EFFECT OF PARATHYROIDECTOMY UPON METABOLISM.

(581) ISIDOR GREENWALD, *Amer. Journ. of Physiol.*, Vol. xxviii., No. 2, May 1, 1911, p. 103.

AN analysis of urine was carried out in order to determine any alteration of metabolism in dogs after the removal of the parathyroids. The following substances were found increased in the urine:—Total nitrogen, only after the appearance of tetany; ammonia slightly (no increase in concentration of ammonia found in the blood), creatin markedly, undetermined nitrogen, as well as inorganic and neutral sulphur.

Creatinin remained fairly constant; urea on the other hand was diminished.

Phosphorus was found to be retained after parathyroidectomy, but with the appearance of tetany there was an increased excretion of phosphorus.

The author holds that after parathyroidectomy the increased excretion of undetermined nitrogen compounds may point to a diminished activity of the liver. His experiments do not support the view that the tetany is due to intoxication by ammonia or by carbonic acid.

R. A. KRAUSE.

STUDIES IN EXPERIMENTAL GLYCOSURIA. VII. THE

(582) **AMOUNT OF GLYCOGENASE IN THE LIVER AND IN THE BLOOD ISSUING FROM IT, AS AFFECTED BY STIMULATION OF THE GREAT SPLANCHNIC NERVE.**

J. J. R. MACLEOD and R. G. PEARCE, *Amer. Journ. of Physiol.*, Vol. xxviii., No. vii., Oct. 2, 1911.

No increase in the glycogenolytic power of extracts of liver was obtained after stimulation of the splanchnic nerve.

R. A. KRAUSE.

**DISSOCIATION OF INHIBITORY IMPULSES FROM NORMAL
(583) CONDUCTION IN THE HEART BY MEANS OF COM-
PRESSION. WALTER E. GARREY, *Amer. Journ. of Physiol.*,
1911, xxviii., 249.**

EXPERIMENTS upon the heart of the turtle demonstrate that a degree of compression sufficient to establish a complete and irreparable sino-auricular block does not interfere with the passage of vagus impulses. The experiments therefore indicate that physiological impulses do not pass from sinus to auricle by nerve paths.

W. F. RITCHIE.

**RHYTHMICITY IN THE TURTLE'S HEART AND COMPARISON
(584) OF ACTION OF THE TWO VAGUS NERVES. WALTER
E. GARREY, *Amer. Journ. of Physiol.*, 1911, xxviii., 330.**

THE rhythmicity of the veins entering the right side of the basal portion of the turtle's heart is greater than that of the vein of the left side. The veins must be regarded as separate tubular heart cavities, physiologically as distinct as is the sinus. When the heart is split sagittally, the rhythm of the left half is initiated in the vein of that side, and is slower than that of the right half. The vagi of the turtle, when stimulated, show a preponderant homolateral effect which is most pronounced upon the basal veins. The left vagus is less effective upon the normal rhythm of the heart than is the right vagus, because the latter innervates the right vein which initiates the cardiac rhythm.

W. F. RITCHIE.

**STUDIES WITH THE ELECTROCARDIOGRAPH ON THE ACTION
(585) OF THE VAGUS NERVE ON THE HUMAN HEART.
G. CANBY ROBINSON and GEORGE DRAPER, *Journ. of Exper.
Med.*, 1911, xiv., 217.**

PRESSURE upon the vagus nerve in a man with a normal heart slowed both auricles and ventricles, depressed conductivity, and probably diminished the force of contraction of the left ventricle. Stimulation of the right vagus had apparently a greater effect on the rate of the heart and on the force of the ventricular contraction than had stimulation of the left vagus, whereas stimulation of the latter had a more marked effect on the conduction of the stimulus from auricle to ventricle.

In hearts showing auricular fibrillation mechanical stimulation of the right vagus nerve caused, as a rule, marked slowing or

stoppage of ventricular rhythm without affecting the auricular fibrillation. The ventricular pauses were apparently due to blocking of stimuli from the auricles. The force of ventricular systole was weakened for several beats after vagus stimulation, and ectopic ventricular beats were sometimes seen, apparently the result of vagus action.

W. F. RITCHIE.

PATHOLOGY.

A PATHOLOGICAL STUDY OF TÜRK'S BUNDLE. J. H. W. (586) RHEIN, *Journ. Nerv. and Ment. Dis.*, Vol. xxxviii., No. 9, Sept. 1911, p. 522.

TWO cases are here described. In the first, as a result of thrombosis which obliterated almost totally the right middle cerebral artery, there was found atrophy and degeneration of the three temporal convolutions and, in large part, the optic radiation of Gratiolet and the fasciculus longitudinalis inferior. The fasciculus of Türk was totally degenerated in the foot of the peduncle, though there were a few stained fibres demonstrable in the sub-thalamic region, and some fibres, which were probably not longitudinal ones, in the foot of the peduncle.

In the second case the middle portions of the second and third temporal convolutions showed atrophy, with degeneration of the white matter of the first temporal convolution and slight atrophy of the posterior portion of the first temporal convolution. The fasciculus longitudinalis inferior and the optic radiations of Gratiolet were markedly implicated at the level of the sub-thalamic region. The fasciculus of Türk, however, was in main preserved, though its volume in the foot of the peduncle was perhaps somewhat reduced.

A. NINIAN BRUCE.

CLINICAL NEUROLOGY.

THE SENSE OF PRESSURE IN THE FACE, EYE, AND TONGUE. (587) W. J. MALONEY and R. FOSTER KENNEDY, *Brain*, Sept. 1911, p. 1.

THE author's investigations were made on patients in whom intracranial operations had been performed upon the fifth nerve for the relief of neuralgia, and on cases of complete seventh nerve palsy, using the Gordon Holmes æsthesiometer and the Cattell algometer. The summary of their results is as follows:

(1) The fifth nerve must be regarded as the essential path for

those impulses from the face which affect consciousness as sensations of *pressure-touch*.

(2) After removal of the Gasserian ganglion, *pressure-pain* may persist unimpaired in the face and tongue, but never in the eye.

(3) The seventh nerve contains no pressure-sense fibres distal to the Fallopian canal.

(4) The seventh nerve in the Fallopian canal is associated with pressure-pain fibres (low threshold mechanism), conveying impulses from pressures up to about 4 kilos, from the skin muscles and bones of the facial muscular apparatus.

(5) These low threshold pain fibres pass through the region of the fifth roots before entering the Fallopian canal.

(6) The sympathetic subserves a general crude sensibility to pressure-pain (high threshold mechanism), which, sometimes, may persist alone after removal of the Gasserian ganglion.

(7) The peripheral twelfth was not found to convey any form of sensation to the tongue.

J. H. HARVEY PIRIE.

MUSCULAR HYPERTROPHY WITH WEAKNESS. A. H. WOODS, (588) *Journ. Nerv. and Ment. Dis.*, Vol. xxxviii., No. 9, Sept. 1911, p. 532.

THE author describes a case of a negro, aged 47, who suffered from early fatigue after any effort, although he was of quite unusually good muscular development. All the muscles felt firm when contracted, fibrillary twitching was never seen, there was no myasthenic reaction, tendon reflexes were unduly prompt, faradic and galvanic stimulation showed no marked change, but painful muscular cramps were often complained of. A portion of muscle excised from the left triceps showed distinct hypertrophy of individual fibres with some increase in the number of nuclei, but no proliferation of fibrous or fatty tissue, and no degeneration of muscular tissue. No round-cell infiltration was seen.

The condition is to be regarded as distinct from pseudo-hypertrophic paralysis, Thomsen's disease, and myasthenia gravis. It usually runs a slow course, and males are more often affected than females.

A. NINIAN BRUCE.

DERMATONEUROMYOSITIS CHRONICA ATROPHICANS. SIMON- (589) SOHN, *Archiv. f. Dermatol. u. Syph.*, Bd. cviii., Heft 1-2, 1911, p. 59.

SIMONSOHN describes the case of a woman, aged 21, who died after an illness of eighteen months. Her skin presented areas, which

at first were red, scaly, and infiltrated. These areas were abruptly marked off from the healthy skin. Later, in the course of the disease, this inflammatory infiltration was replaced by atrophy and mottled pigmentation of the skin. The face, scalp, and extensor aspects of arms and hands were at first affected, and later the body and lower limbs. The affected areas were spontaneously painful, and also tender to touch. The underlying muscles were stiff and tender. The face became mask-like. A general paresis of the whole body was present, so that the patient could not even sit up without assistance. The muscles most affected were those of the ball of the thumb and small muscles of the hand, the shoulder muscles and muscles of the back. The extensor muscles of the limbs were more affected than the flexor. Skin sensibility was unaffected. Reflexes of upper arms were increased. Knee jerk and Babinski absent. Achilles jerk present. Temperature usually from 38 to 38.5° C. Pieces of skin excised showed, in the early stages, a small-cell infiltration into the corium, with some hypertrophy of the epithelial layers, but the older lesions showed marked atrophy of all the elements of the skin.

The patient became gradually weaker, showing extreme atrophy of the muscles, with here and there nodular thickenings to be felt. The limbs showed contractures, and patient died of general weakness and continuous pain in the muscles. The treatment employed was arsenic, pot. iodide, hydrotherapy, and massage. She also had .5 grm. "606," although there was no history of syphilis. Post-mortem the muscles showed fatty degeneration of the fibres, with connective tissue overgrowth. A marked degeneration was found of the ganglion cells in the anterior horn of the cord, as well as of Clarke's column and cells of the lateral horn. The author considers the nerve-cell changes secondary to those in the muscles.

Clinically the condition resembles the changes seen in the muscles in infective myositis, metastatic disease of muscle and trichinosis, and in the skin in generalised lupus erythematosus and scleroderma. Simonsohn is quite unable to suggest any cause for the condition.

R. CRANSTON LOW.

A CASE OF EXTENSIVE HERPES. G. O. WILLIAMS, *Med. Record*, (590) 1911, ii., p. 478.

THE patient was a woman, aged 68, in whom herpes appeared simultaneously on the upper lip, left nostril, left internal canthus, left middle ear, and external auditory meatus. The membrana tympani and ossicles were destroyed, and considerable impairment of hearing resulted.

J. D. ROLLESTON.

TABES IN VIRGINS. (*Tabische Jungfrauen.*) KURT MENDEL and (591) ERNST TOBIAS, *Med. Klinik*, 1911, vii., p. 1654.

AMONG 151 tabetic women the writers found fourteen unmarried, five of whom were virgins. In three of these syphilis was inherited, and in the other two acquired by extra-genital infection. The paper ends with the following aphorism:—

Virgo non fit tabica nisi per parentes aut per luem insontium.

J. D. ROLLESTON.

PRURITUS IN TABES. (*Du prurit tabétique.*) E. BITOT, *Ann. de (592) dermat. et de syph.*, 1911, 5^e sér., ii., p. 356.

A RECORD of two cases, one in a man, aged 63, who had had tabes for thirty-six years, and the other in a man, aged 39, who had had tabes for five years. In both the pruritus alternated with and was less tolerable than the lightning pains. In the first case the pruritus was localised in the abdomen, lower limbs, and sacrum; in the second it affected the deltoid axillary and mammary regions, abdomen, arms, and thighs.

Tabetic pruritus may arise without apparent cause, but diatetic or sexual indulgence may provoke it. In addition to general treatment, Bitot recommends the application of red silk or rep to the pruriginous areas.

J. D. ROLLESTON.

VON RECKLINGHAUSEN'S DISEASE, WITH REPORT OF FOUR (593) CASES. H. N. COLE and H. K. SHAWAN, *Cleveland Med. Journ.*, 1911, x., p. 653.

CASE 1.—Man, aged 67. No family history. Multiple subcutaneous tumours and pigmentation. Average mentality. Microscopical examination of tumours showed dense fibrous tissue in all except one, which was a pure lipoma.

CASE 2.—Man, aged 40. Multiple cutaneous and subcutaneous tumours and pigmentation. Plexiform neuromata in the left scapular region and about neck. Large fibroma with elephantiasis formation attached to sternum. His mother had had a round painless tumour removed from her wrist some years previously, and his four sisters had multiple small skin tumours but no large ones.

CASE 3.—Man, aged 21. No family history. Multiple cutaneous and subcutaneous tumours; plexiform neuroma and elephantiasis formation on cheek; hypertrophy of right maxillary bones. Many pigmented areas.

CASE 4.—Youth, aged 17. No definite family history. Several subcutaneous tumours. Racemose neuroma of face with dark pigmentation and heavy growth of hair over it. Average mentality. Recurrence of growth followed the operation.

J. D. ROLLESTON.

GENERALISED NEUROFIBROMATOSIS IN A MOROCCAN

(594) **BERBER.** (Un cas de neurofibromatose généralisée (maladie de Recklinghausen) observé chez un Berbère marocain.) H. FOLEY and A. YVERNAULT, *Arch. f. Schiffs- u. Tropen-Hyg.*, 1910, xiv., p. 165.

ONLY two cases of Recklinghausen's disease have previously been recorded in natives of North Africa. The present case occurred in a man aged 35, who had first noticed the tumours at the age of fourteen years. There was no family history. A microscopical examination could not be carried out, but the diagnosis was made from the characteristic appearance of the cutaneous tumours associated with punctiform spots and café-au-lait patches.

J. D. ROLLESTON.

PURPURA WITH FATAL CEREBRAL AND CEREBELLAR

(595) **HÆMORRHAGE.** (Purpura avec hémorragie cérébrale et cérébelleuse mortelle.) F. BALZER and BURNIER, *Bull. Soc. franç. Derm. et Syph.*, 1911, xxii., p. 197.

A MAN, aged 24, died suddenly after a few days' illness in which the purpuric symptoms were mainly blood-stained salivation and hæmaturia. The necropsy showed, in addition to hæmorrhages in almost all the other organs, an abundant effusion at the base of the brain. On section the whole of the right lateral ventricle and posterior horn of the left lateral ventricle were found to be filled with blood. The right cerebellar hemisphere was partly destroyed by hæmorrhage, the left appeared normal. There were no hæmorrhages in the pons or medulla.

J. D. ROLLESTON.

PURPURA AND POLYNEURITIS. (Purpura et polynévrite.)

(596) GAUCHER, GOUGEROT, and DUBOSC, *Bull. Soc. franç. Derm. et Syph.*, 1911, xxii., p. 17.

A RECORD of a case in an alcoholic woman, aged 37, in whom a polyneuritis, almost exclusively sensory in character, was associated with a purpuric eruption.

J. D. ROLLESTON.

SPASM OF THE PHARYNX AS A PRODROME OF PNEUMONIA.

(597) (*Pharynospasme symptome initial d'une pneumonie.*) LAF-
FORGUE, *Gaz. des Hôp.*, 1911, lxxxiv., p. 1508.

THE patient was a soldier, without any neurotic history. The symptom is attributed by Lafforgue to irritation by the inflamed pleura of the fibres of the recurrent laryngeal distributed to the pharynx.

J. D. ROLLESTON.

B. COLI IN THE CEREBRO-SPINAL FLUID. (*Bacterium coli im*

(598) *Liquor cerebrospinalis.*) W. HARTWICH, *Berl. klin. Woch.*,
1911, xlviii., p. 795.

THIS finding was made in the case of a man, aged 48, who died of acute miliary tuberculosis. Two lumbar punctures showed an absence of tubercle bacilli and the presence of organisms which bacteriological tests proved to be *B. coli*. In addition to miliary tuberculosis elsewhere, the necropsy showed extensive tuberculous ulceration of the small intestine, to which Hartwich attributes the infection with *B. coli*.

J. D. ROLLESTON.

THE IMMEDIATE CURATIVE EFFECT OF LUMBAR PUNCTURE

(599) **IN COMA FROM SUNSTROKE.** (*De l'effet curatif immédiat de la rachicentèse dans un cas de coma par insolation.*) P. GASTINEL and P. MEAUX ST MARC, *Gaz. des Hôp.*, 1911, lxxxiv., p. 1507.

The patient was a man, aged 30, in whom the removal of 25 c.c. of cerebro-spinal fluid caused complete disappearance of all symptoms within half an hour. The fluid, which was under great hypertension, was perfectly clear, and showed no cells after prolonged centrifugalisation.

J. D. ROLLESTON.

A CURIOUS CASE OF TUBERCULOUS MENINGITIS. M. FREIMAN,

(600) *N.Y. Med. Journ.*, 1911, ii., p. 531.

A FATAL case in a man, aged 51, in whom tuberculous meningitis was secondary to tuberculosis of the second and third lumbar vertebræ.

J. D. ROLLESTON.

SERUM TREATMENT OF INFLUENZAL MENINGITIS. MARTHA (601) WOLLSTEIN, *Journ. Exp. Med.*, Vol. xiv., No. 1, July 1, 1911, p. 73.

THE author was able to produce an acute inflammation of the meninges in monkeys by injection of virulent cultures of bacillus influenzae into the subdural space, the condition resembling influenzal cerebro-spinal meningitis as found in man clinically, bacteriologically and pathologically. In the monkey death followed in from thirty-six hours to four days, the influenza bacilli spreading into the general blood stream, from which they may be recovered during life and at autopsy.

Living virulent cultures of this bacillus, after repeated injection into the goat, produce an immune serum possessing moderate agglutinating and high opsonic power, which, when injected into the subdural space in monkeys, may arrest an experimental influenzal meningitis and bring about the recovery of the animal.

It is recommended that such a serum should be used in man, but the diagnosis must be made early (microscopical examination of the cerebro-spinal fluid is sufficient), and the serum applied at once and by repeated injection by means of lumbar puncture to secure beneficial results.

A. NINIAN BRUCE.

NOTES ON A CASE OF OPERATION FOR RUPTURED (602) **MENINGO-ENCEPHALOCELE.** W. EDMOND, *Lancet*, Oct. 28, 1911, p. 1198.

THE case was that of a newly-born infant with a large meningo-encephalocele over the posterior fontanelle. There had been prolonged pressure during labour, sloughing of the coverings, and a tear 2½ inches long from which cerebro-spinal fluid was dripping and portions of brain protruding. Two flaps of skin were cut, one from the upper and one from the under surface of the hernia. Lateral flaps of dura were obtained, but the superior longitudinal sinus had to be sutured, and a considerable protrusion of brain on either side of the exposed false cerebri removed. Bringing together of these flaps secured an almost watertight union. There was a little leakage for twenty-four hours, then it ceased. The child was discharged in three weeks' time, when, so far as could be made out, there was no motor paralysis nor any visual defect.

J. H. HARVEY PIRIE.

**DISPLACEMENT OF THE CEREBELLUM FROM TUMOUR OF
(603) THE POSTERIOR CRANIAL FOSSA.** WM. G. SPILLER,
Brain, Sept. 1911, p. 29.

IN this communication the writer draws attention to two forms of displacement of the cerebellum from tumours in the posterior cranial fossa—viz., lateral displacement, in which the cerebellum is nearly at a right angle with the brain stem; and upward displacement, in which the tentorium is much distended and the occipital lobes are widely separated by the dislocated cerebellum. The lateral, twisting form of displacement is the rarer of the two. A comparatively small tumour may cause considerable displacement, while a larger one may cause more, the presence or absence of adhesions being the determining factor, not the size or position of the tumour. Symptoms are sometimes observed indicative of a lesion on the side opposite to that occupied by a basal tumour. This may be due to drag on the medulla, pressing it against the base of the skull, or, as has been suggested by Oppenheim, to constriction of the medulla by the tightly stretched vertebral artery. The writer considers that they may be due to stretching of cranial nerves on the side opposed to the tumour by the displacement of the brain stem from the median line in the direction of the tumour by a dislocated cerebellum lobe, or to pressure on the contralateral side of the pons by the displaced cerebellar lobe.

The resistance offered by the tentorium must be another factor in the displacement of the cerebellum; where the membrane is dense and unyielding, atrophy rather than displacement will occur; where resistance is less, the cerebellum may be driven far up between the occipital lobes, separating them widely. Any occipital lobe symptoms are likely to be masked, however, as displacement cannot occur until the pressure from the tumour becomes great and papilloedema is sure to have occurred.

J. H. HARVEY PIRIE.

A CASE OF BRAIN TUMOUR. O. T. MANLEY, *Journ. Amer. Med. Assoc.*, Vol. lvii., No. 13, Sept. 23, 1911, p. 1042.

THE case is that of a boy, aged 19, who complained of poor vision, diplopia, and headache. On examination the right pupil was found to react to light and accommodation, the left only feebly if at all. Double optic neuritis and hæmorrhagic retinitis were present. The vision became worse, and homonymous hemianopia (right halves of both retinae blind) and unilateral hemichromatopsia

(temporal half of left retina colour blind) developed. There was a tender area on the right side of the scalp near the external auditory meatus, and a less tender area on a corresponding point on the opposite side. The muscular power of the left hand was diminished, but apart from this no evidence of motor, sensory, or other affection was found.

The patient was trephined on the right side. Great increase of intracranial pressure was found, with much degenerated brain tissue. His general condition was much improved by the operation, but a cerebral hernia developed with progressive paralysis of the left leg, and he died three weeks after the operation.

At the autopsy a glioma was discovered, involving the optic radiation on the right side, with calcareous deposits and cystic and degenerative changes.

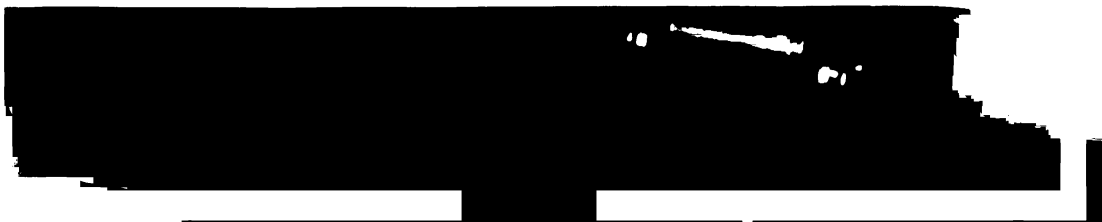
A. NINIAN BRUCE.

THE DEVIATION OF THE TONGUE IN HEMIPLEGIA. ERNEST (605) JONES, *Journ. Nerv. and Ment. Dis.*, Vol. xxxviii., No. 10, Oct. 1911, p. 577.

PROTRUSION of the tongue towards one side is effected, partly by the stylo-glossus of that side, but mainly by the genio-glossus of the opposite side. The movement of touching the cheek with the tip of the tongue is effected, mainly by the stylo-glossus of that side, and partly by the genio-glossus of the opposite side. There exist in the cortex of each hemisphere centres for: (1) the co-ordinate action of both genio-glossi, (2) the co-ordinate action of both stylo-glossi, (3) the co-ordinate action of the homolateral genio-glossus and the contralateral stylo-glossus.

On protrusion of the tongue in hemiplegia one of two kinds of lateral deviation may occur: (1) the typical one towards the paralysed side, (2) an atypical one towards the side of the lesion; and typically in hemiplegia the tongue can be put into the cheek on the side of the lesion more easily than into that on the side of the paralysis; atypically the reverse is the case. The author has examined 313 cases of hemiplegia, and finds that four sets of cases are to be distinguished, and considers that the four symptoms, two typical and two atypical (homolateral and contralateral paralysis of the two muscles in question), can probably be accounted for by a varying implication of the four different cortico-bulbar tracts that proceed from each hemisphere, depending either upon a variation in the crossing in different cases or on a variation in the position of the lesion.

A. NINIAN BRUCE.



SPASTIC HEMIPLEGIA OF THE RIGHT ARM: HEMILAMIN-
 (606) **ECTOMY WITH POSTERIOR ROOT SECTION.** ALFRED
 S. TAYLOR (Proc. New York Neurol. Soc.), *Journ. Nerv. and*
Ment. Dis., Vol. xxxviii., No. 6, June 1911, p. 359.

PATIENT, a male, 30 years old, had right hemiplegia with aphasia from the age of four years. This was accompanied by severe spasm of muscles of right arm with athetotic movements.

Right hemilaminectomy with hemi-section of posterior roots of seventh and eighth cervical and first dorsal nerves, also of the upper half of the sixth cervical nerve, was performed, with the result that pain and spasticity disappeared with some return of movement.

Abbe mentions a similar case where operation afforded the patient (a woman with a two years' hemiplegia) relief from spasm, but gave no return of motor power. R. C. ALEXANDER.

CASE OF SPASTIC DIPLEGIA: HEMILAMINECTOMY: POS-
 (607) **TERIOR ROOT SECTION.** ALFRED S. TAYLOR (Proc. New
 York Neurol. Soc.), *Journ. Nerv. and Ment. Dis.*, Vol. xxxviii.,
 No. 6, June 1911, p. 358.

CASE reported is that of a girl of 7 years, with congenital spastic diplegia. At age five, tenotomies at groins, knees, and heels gave a partial improvement. Hemilaminectomy, with partial division of the first lumbar to third sacral posterior nerve roots on both sides, and complete division of posterior roots of twelfth dorsal nerves effected a great improvement on gait with no sensory or trophic disturbance. This procedure seemed of great value as a preliminary to training of movements. R. C. ALEXANDER.

LAMINECTOMY FOR INJURY AND TUMOUR OF THE SPINAL
 (608) **CORD.** GEORGE P. MULLER, *Annals of Surgery*, June 1911,
 p. 754.

THE author discusses the uses of laminectomy. He points out that in injury of the cord Estes, arguing from two cases in which he resected a portion of disintegrated cord in the lower dorsal region and lumbar region respectively and joined the ends with a considerable return of power in sphincters and lower limbs, advises early operation in all cord injuries, while Murphy and others condemn suture of the cord as useless on the ground that grey matter does not regenerate.

Balley and others hold that where there is definite evidence of compression of the cord, there is sufficient encouragement to operate in practically all cases. The writer describes two cases operated on, and concludes that in the lower dorsal and lumbar regions operation for injury should be advised, as the mortality is under 10 per cent. He concludes that it is inadvisable higher up, but points out that in twenty collected cases of forcible reduction of cervical dislocation twelve recoveries were obtained.

In cases of tumour he strongly advocates exploratory laminectomy, describing a case in which an endothelioma of pia arachnoid in the cervical region causing pressure on motor roots was successfully removed with great benefit as regards function.

He records another case partially successful, and one in which the patient died of shock.

A successful case of operation for circumscribed serous spinal meningitis at level of tenth dorsal vertebra is also noted.

R. C. ALEXANDER.

MOTOR AND SENSORY CHANGES OF RADICULAR TYPE
(609) **FROM SOFTENING OF THE GREY MATTER OF THE**
SPINAL CORD. (*Altérations de la motilité et de la*
sensibilité à topographie radiculaire dans un cas de ramollisse-
ment de la substance grise de la moelle.) M. G. MATTIROLO,
Rev. Neurol., No. 13, July 15, 1911, p. 1.

FRACTURE dislocation at the level of the first dorsal vertebra in an otherwise healthy man. Clinically, flaccid paralysis of the lower extremities without R.D. Flaccid paralysis of the following muscles of the upper extremities (with R.D.): Left side—small muscles of the hand; interossei and lumbricals; long flexors of the fingers; costal portion of the pectoralis. Right side—small muscles of the hand; interossei and lumbricals; long flexors of the fingers; long extensors of the fingers; long extensors of the wrist; pectoralis; pronator radii teres; triceps. Absolute anæsthesia (superficial and deep) of legs and body as far up as the level of the second rib. Loss to pain and temperature of radicular distribution (C7, C8, D1), with no impairment of tactile sensibility. Loss of tendon and superficial reflexes, except in the arms. Death in twenty-four hours. At the autopsy: fracture of the body of the first dorsal vertebra; complete destruction of the cord at a level corresponding to the junction of the first and second dorsal segments. Above the transverse lesion, two symmetrical softenings in the grey matter of C7 and C8. The roots of these segments were intact, macroscopically. The case is of interest because it would appear to

support Dejerine's contention that in the grey matter of the cord the motor centres are grouped in a radicular way.

S. A. K. WILSON.

TRAUMATISM OF THE LEFT FACIAL NERVE. (Traumatisme (610) *der nerf facial gauche: paralysie flasque des muscles du front, avec conservation des réactions électriques: parésie, légère contracture et mouvements spasmodiques des autres muscles.*) BOUCHARD, *Rev. Neurol.*, No. 13, July 15, 1911, p. 4.

THE trauma was a fall of twelve feet on to the head, with loss of consciousness for four days, and subsequent left facial paralysis. The importance of the case consists in the combination of flaccid palsy in one part of the facial distribution, with contracture and involuntary facial spasm in the rest. The inter-relation of facial palsy and facial spasm is therefore intimate.

S. A. K. WILSON.

TIC DE SALAAM. (Sur le tic dit de Salaam.) O. ASCENZI, *Rev. Neurol.*, No. 12, June 30, 1911, p. 725.

A DISCUSSION of the nature of tic de Salaam, of its possible epileptic significance, and of the relation of spasmus nutans to eclampsia nutans, apropos of a typical case in a little child of two and a half years.

S. A. K. WILSON.

RESEARCHES IN EPILEPSY. D. MOORE ALEXANDER, *Lancet*, (612) Oct. 14, 1911, p. 1072.

THIS is the record of an immense amount of painstaking work on epilepsy, along the following lines:—I. *Brain*. (1) Attempts to produce an epileptic animal; (2) histology of an epileptic brain. II. *Blood*. (1) Agglutination reaction of epileptic blood with *B. coli*; (2) opsonic index for *B. coli*. III. *Urine*. (1) Urea-ammonia ratio; (2) chemical evidences of intestinal putrefaction; (3) correlation of these evidences with actual putrefactive organisms present in epileptic faeces. IV. *Faeces*. (1) General bacteriological survey; (2) special bacteriological survey of an early case.

As the author remarks, his results are uniformly negative, with one exception, viz.: There appears to be a relationship between a fit and a low urea-ammonia ratio.

J. H. HARVEY PIRIE.

**THE DEVIATION OF COMPLEMENT IN CASES OF SO-CALLED
(613) IDIOPATHIC EPILEPSY.** G. H. GARNETT, *Journ. Ment. Sci.*,
Oct. 1911.

THE author has employed the complement fixation test in order if possible to elucidate some of the problems connected with epilepsy. A brief *résumé* is first given of the various theories regarding the causation of epilepsy, and then the technique employed in the author's investigations is fully described. Urine of epileptics was used as the antigen, and the serum of epileptics as the antibody. Urines and sera of persons not suffering from epilepsy were used as controls. Complement and indicator were of the usual nature. The results obtained in the case of epileptics were not conclusive in themselves, but were very striking when compared with those obtained in non-epileptic persons.

The principal conclusions arrived at were as follows:

The serum of epileptics contains some substance of the nature of a specific antibody.

The urine of epileptics generally contains a substance specific to the antibody in the serum.

The serum of non-epileptics does not contain this antibody.

The urine of non-epileptics occasionally contains a substance which when mixed with the serum of an epileptic is capable of deviating a small amount of complement, but not to the same extent as when the urine of an epileptic is used. W. BOYD.

THE ETIOLOGY OF PUERPERAL PSYCHOSES. (Zur Ätiologie
(614) der Puerperalpsychosen.) A. MÜNZER, *Neurol. Centralbl.*,
Aug. 1, 1911, Nr. 15, p. 851.

MÜNZER points out that hitherto the exhaustion consequent upon the strain of pregnancy and labour has been regarded as the principal underlying factor in these conditions. Exhaustion, however, has not such an influence in the case of other diseases, such as cancer and tuberculosis, in which an even greater degree of it is common. In view of the startling fact that the author found that 21 per cent. of all the women confined at the Heidelberg Clinic suffered from puerperal psychoses, he feels bound to look for some specific causal factor, and he believes that he has found such in the internal secretion of the uterus. The existence of this secretion is still to some extent hypothetical, but the results of Fellner's work go to indicate that it is one of the blood-pressure-raising group of secretions, and in so far antagonistic to the internal secretion of the ovaries.

The author believes that such a secretion will be greatly increased in quantity during pregnancy and in the puerperium, and that it may pass into the circulation and give rise to changes in the central organs that may well be the basis of mental disturbance. In the puerperium there is the additional complication of a large quantity of uterine tissue being rapidly absorbed, which may be a further source of poison.

In the case of lactation psychoses coming on after the close of the puerperium, these influences cannot be regarded as playing any part. In them exhaustion must still be regarded as the main factor.

R. W. JOHNSTONE.

IS THERE ANY CONNECTION BETWEEN DIFFICULT OR (615) STILL BIRTHS AND SUBSEQUENT PSYCHIC AND NERVOUS DISTURBANCES? (Bestehen nachweislich Beziehungen zwischen asphyktischer und schwerer Geburt zu späterhin auftretenden psychischen und nervösen Störungen?)
W. HANNES, *Neurol. Centralbl.*, Sept. 16, 1911, Nr. 18, p. 1035.

HANNES has investigated a number of children growing up in an institute connected with the maternity hospital in which they were born with the view of throwing some light on this question. Mendel, Mitchell, Little, Langdon-Down, and others have regarded asphyxia neonatorum as of etiological significance in connection with Little's disease and idiocy; and König, Vogt, and others have referred to the possibly far-reaching consequences of cerebral hæmorrhages produced by difficult birth and asphyxia. The use of forceps at birth has also been blamed by many writers for the development of subsequent nervous and mental affections.

Hannes, having access to the records of the children's births, has been able to trace the history of a considerable number of individuals.

He investigated three series of cases. The first comprised 150 cases of asphyxia neonatorum in which the child recovered; the second 150 cases in which the birth was difficult and had to be artificially aided in some manner; the third 150 cases of normal spontaneous birth.

In the first series there was amongst 62 survivors 3·2 per cent. of mental anomaly or backwardness. There was in this series no case of idiocy. In the second series of 90 survivors 2·2 per cent. showed some mental anomaly and 1·1 per cent. idiocy. In the third series 89 survived, and of these 3·4 per cent. showed mental deficiency in some respect and 1·1 per cent. idiocy.

Hannes concludes that in the first place there is no ground for the belief that forceps at birth have any ultimately injurious effect

upon the child. Secondly, there is every reason to believe that if a stillborn child be resuscitated from its asphyxia, and have no other associated complication during the first week of its life, it will not suffer in any way subsequently from the dangers and difficulties surrounding its birth. R. W. JOHNSTONE.

FOUR CASES OF MYXŒDEMA. SALTER, *Australas. Med. Gaz.*, (616) Aug. 21, 1911, p. 441.

THESE four cases are of interest, as they were not very markedly myxœdematous in appearance, and were confused with Bright's disease. Two had albuminuria. Two of the cases dated their symptoms from a curretting and one from an oöphorectomy.

A. NINIAN BRUCE.

A FURTHER CASE OF MYXŒDEMA WITH CEREBELLAR (617) SYMPTOMS. (*Encore un cas de myxœdème avec symptômes cérébelleux.*) G. SODERBERGH, *Rev. Neurol.*, No. 14, July 30, 1911, p. 86. (3 figs.)

A MODERATELY severe case of myxœdema in a woman of 47, who in addition presented the typical phenomena of adiadococinesia, cerebellar catalepsy, and cerebellar asynergy. As tested by Babinski's methods, under suitable thyroid medication, the cerebellar symptoms disappeared in the above order. The author suggests that a myxœdematous intoxication of the cerebellum is conceivable.

S. A. K. WILSON.

OCULAR MANIFESTATIONS OF THE PERIPHERAL AFFECTIONS OF THE FIFTH CRANIAL NERVE. (618) G. H. BELL, *Med. Rec.*, May 13, 1911, p. 863.

THE author urges the importance of careful examination of the teeth in certain ocular and orbital affections. Three cases of neuralgia are discussed, and various other conditions are mentioned. The paper contains nothing new.

H. M. TRAQUAIR.

ON THE PUPIL REFLEX PATHS. (*Beiträge zur Kenntnis der (619) Pupillarreflexbahnen.*) BUMKE and TRENDELENBURG, *Klin. Monatsbl. f. Augenheilk.*, Aug. 1911, p. 145.

THIS paper is a review of the present state of our knowledge of the papillary light-reflex. The work of numerous writers is

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quoted. The researches of the last ten years have been of great value, and have definitely narrowed the area of possibilities. Owing to the difficulty of demonstrating lesions of special fibres in cases of disease, the most urgent, if not the only, object of future investigations will be to trace exactly the fibres concerned in the normal pupil reflex.

H. M. TRAQUAIR.

**ON OPHTHALMOSCOPICALLY VISIBLE ALTERATIONS IN
(620) THE BLOOD - VESSELS IN CENTRAL SCOTOMA IN
TOBACCO - ALCOHOL AMBLYOPIA AND ARTERIO-
SCLEROSIS CEREBRI.** KRÜGER, *Klin. Monatsbl. f. Augen-
heilk.*, 1911, i., p. 579.

SIX cases are described in which excessive use of alcohol and tobacco and central scotoma were associated. In all of these cases the author found endarteritic changes in the blood-vessels, and a characteristic feature was tortuousness and dark colour of the veins near the macula.

In three other cases in which tobacco and alcohol could be excluded, central scotoma was present in two, and arteriosclerotic changes were marked in all. The author's reason for classing the remaining case as amblyopia in the presence of normal central and peripheral vision is not clear. The changes observed in these and one other case are discussed at length, and the author suggests that in a certain number of cases, at any rate, of tobacco-alcohol amblyopia the vessels are affected primarily, the central part of the retina suffering first.

The remainder of the paper is devoted to a critical examination of published work on the pathological anatomy of tobacco amblyopia, from which the author draws conclusions favourable to his theory.

H. M. TRAQUAIR.

CAUSE OF SUDDEN DEATH AFTER DIPHTHERIA. S. SHELDON,
(621) *Australas. Med. Gaz.*, Aug. 21, 1911, p. 451.

A CASE is mentioned here of a girl, aged 14, who began to cough during a meal after convalescence from diphtheria. She became unconscious and died. At the post-mortem the heart muscle was stated to be normal, and death was attributed to a large greenish-yellow slough about one and a half inches long which was found in the trachea, and which was considered to have plugged the air passages and thus caused death.

A. NINIAN BRUCE.

SYPHILIS, DIPHTHERITIC PARALYSIS, HERPES OF THE SOFT

(622) **PALATE.** (*Syphilis, paralysie diphtérique, herpes vélo-palatin.*) P. GASTINEL and A. PELISSIER, *Gaz. des Hôp.*, 1911, lxxxiv., p. 1620.

A WOMAN, aged 26, who had contracted syphilis in August, developed diphtheria in October, followed by palatal palsy which lasted three weeks. This was succeeded by a bilateral relapsing herpes of the soft palate, several attacks occurring within a few weeks. The writers attribute the localisation of the eruption partly to the preceding palatal palsy and partly to syphilis.

J. D. ROLLESTON.

THE BUTYRIC ACID REACTION OF THE CEREBRO-SPINAL

(623) **FLUID AND ITS DIAGNOSTIC VALUE IN SYPHILIS OF THE NERVOUS SYSTEM.** (*La réaction du Liquid Céphalo-Rachidien à l'acide Butyrique (reaction du Noguchi). Sa valeur dans la diagnostic des Syphilis du Névrose.*) J. EUZIÈRE, MESTREZAT, and H. ROGER, *L'Encéphale*, Sept. 1911.

THESE authors used a modification of Noguchi's original method. They doubled the quantity of the fluids, and also made a time limit of three hours after each investigation before recording the result. If a precipitate is now obtained the reaction is positive; on the other hand, if there is no deposit, but the fluid presents suspended flocculi, it is considered a negative result. In tabes and general paralysis, also in cases of cerebral syphilis, a positive result was always obtained. They found in cases of general paralysis that although the reaction was positive, the quantity of albumen was little or only slightly raised, an observation which differs from other investigators; also the number of cases examined were few. In cases of syphilis with no nervous symptoms the reaction was negative, and in this respect their observations differ from those of Noguchi. In acute non-specific inflammatory conditions of the meninges the reaction was positive in the spinal fluid. In chronic nervous lesions, not specific, in eight cases where the quantity of albumen was in excess, four cases gave positive findings and two were doubtful.

In a case of tabes treated with an intraspinal injection the reaction which had before been positive became negative. This fact of directly opposite results in the same case limits the information given by the reaction.

As a result of their investigations the authors consider that a positive butyric acid reaction is a certain means of diagnosis only in one case, namely, in a spinal fluid where the reaction is negative and where the albumen is increased (0.5 to 0.8 per litre), then the

presence of syphilis can be definitely excluded. In spinal fluid with an excess of albumen a positive reaction proves nothing. In spinal fluids where the quantity of albumen is normal or slightly raised a positive reaction without being conclusive is an indication in favour of the existence of syphilis.

This last conclusion does not coincide with other recent observations.

WINIFRED MUIRHEAD.

**PRELIMINARY REPORT ON FIFTEEN CASES OF SYPHILITIC
(624) DISEASE OF THE CENTRAL NERVOUS SYSTEM
TREATED WITH SALVARSAN.** (Vorläufiger Bericht über
15 mit Salvarsan behandelte Fälle von syphilitischen Er-
krankungen des Zentralnervensystems.) L. MINOR, *Neurol.
Centralbl.*, Nr. 14, 1911, S. 770.

The writer found that in acute syphilitic affections of the brain wonderful results followed treatment with salvarsan. In chronic cases the results were never so striking nor so constant. Of four cases of tabes so treated, one showed a striking and one a very great improvement, but in no case was a cure obtained. In one case of tabes and myelitis the myelitis disappeared after two .3 gm. doses of "606," but the tabes remained unaffected. Of two cases of meningo-myelitis syphilitica chronica, one showed a very pronounced improvement, the other, an old-standing paraplegic case, remained *in statu quo*. In one acute case of Brown-Séquard paralysis, a wonderful recovery followed salvarsan treatment, and in another more chronic case of the same type a marked improvement resulted. Two cases of cerebral gumma showed distinct but not striking improvement. In one of the tabetic cases in which marked improvement had immediately followed treatment with "606," commencing optic atrophy was found five months later. Minor does not attribute this complication to the effects of the drug, but thinks that at the time of the injection there was a latent optic atrophy which escaped detection on ophthalmoscopic examination. In cases of tabes, if salvarsan be given at all, it should be administered cautiously in small doses.

D. P. D. WILKIE.

REMARKS ON THE USE OF SALVARSAN IN NEUROLOGY.
(625) (Bemerkungen über die Anwendung des Salvarsans in der
Neurologie.) H. VOGT, *Neurol. Centralbl.*, Nr. 14, 1911, S. 787.

FROM a study of the many reports from all quarters, as well as from a wide personal experience, Vogt comes to the following conclusions:—

Generally speaking, the treatment of syphilis of the nervous

system, and in particular of the chronic hyperplastic processes, of syphilitic meningitis and meningo-myelitis, and also of gummata, by injections of salvarsan, has been attended by good, and in many cases by brilliant, results. Many observers have drawn attention to the fact that old standing cases that have resisted all previous treatment frequently react in a wonderful way to this drug. The results from intravenous and from intra-muscular injections, from one large dose and from repeated smaller doses, have been on the whole fairly uniform. In para-syphilitic cases the results of salvarsan treatment are much less favourable. In general paralysis the results have not justified the enthusiastic expectations. Nevertheless, in numerous isolated cases, especially those in the early stages of the disease, great improvement has been found to follow treatment with "606." The results in tabes have been much more encouraging, and Vogt has observed that cases with inconstant and variable pains, with lesions of the ocular muscles and with ataxia, respond to treatment much better than do those with extensive sensory disturbances.

The following conditions contra-indicate salvarsan treatment:— Extensive destruction of nerve tissue, softening, widespread cicatrization or degeneration, as, *e.g.*, in advanced tabes and general arterio-sclerosis of the cerebral vessels. Great care and caution must be exercised in the treatment of cases of congenital syphilis, and only those children whose general nutrition is good should undergo treatment.

Cases with localised syphilitic lesions in the neighbourhood of important vital centres should be excluded from treatment, as the Herxheimer reaction might endanger life in such cases.

Recurrences in the nervous system, particularly in the cranial nerves after salvarsan treatment in the secondary stage of the disease, are, in Vogt's opinion, in no way due to the toxic action of the drug, but are merely late manifestations of latent specific disease in the nerves.

In spite of the general preference for treatment by a large intravenous dose of the drug, Vogt favours repeated small intra-muscular doses, especially in cases of chronic nervous disease.

D. P. D. WILKIE.

NERVE LESIONS FOLLOWING SALVARSAN TREATMENT.

(626) (*Über Neurorezedive nach Salvarsan.*) A. SAENDER, *Neurol. Centralbl.*, Nr. 14, 1911, S. 796.

SINCE Wechselmann first called attention to the fact that lesions in one or more of the cranial nerves were liable to occur in a small proportion of the early cases of syphilis which had undergone salvarsan treatment, a large number of such cases have been

recorded, and various opinions have been expressed as to the cause of such lesions. After the unfortunate experiences with atoxyl and arsazetin in this regard, it is of especial importance to determine whether these nerve lesions can be in any way attributed to a toxic action of the drug salvarsan.

Saenger points out that before the discovery of this drug lesions in the cranial nerves during the secondary stage of syphilis were by no means rare, and were indeed probably more frequent than now, but only since the interest of the profession has been focussed on syphilis by the wonderful results accomplished by this new drug have these lesions been brought into the lime-light. No case of such a nerve lesion has been recorded after the administration of salvarsan for any disease other than syphilis. Similar cases of nerve lesion have been met with after treatment of syphilis by mercurial preparation.

The cause of such lesions can only be traced to an imperfect sterilization of the system by the dose or doses of salvarsan administered.

D. P. D. WILKIE.

**ON THE FORMATION OF PRECIPITATES AFTER THE INTRA-
(627) VENOUS INJECTION OF SALVARSA.** DON R. JOSEPH,

Journ. Exp. Med., Vol. xiv., No. 1, July 1, 1911, p. 83.

THE author finds that acid solutions of salvarsan and blood when mixed together, either in vivo or in vitro, produce a precipitate. On injecting acid solutions of salvarsan intravenously into dogs and rabbits, even in the concentrations used in man, a precipitate forms in the blood stream. This precipitate is not found in blood taken from the left ventricle nor from the arteries, but is abundantly present in blood taken from the right ventricle and from the lungs. The formation of this precipitate, however, is not necessarily fatal, at least in the rabbit.

Alkaline solutions of salvarsan, even in strong concentration, never produce a precipitate when injected intravenously.

A. NINIAN BRUCE.

THE EFFECT OF SALVARSA UPON THE HEART IN DOGS.

(628) J. AUER, *Journ. of Exper. Med.*, 1911, xiv., 248.

IN dogs the intravenous infusion of 0.5 per cent. acid "606" causes a weakening of the heart which is usually fatal. The intravenous infusion of 0.5 per cent. alkaline "606" causes no marked effect upon the heart, but in some instances the margin of safety may be so reduced that a slight extra strain produces fibrillation and death.

W. F. RITCHIE.

PSYCHIATRY.

THE EARLY SYMPTOMS OF GENERAL PARALYSIS. P. C. (629) KNAPP, *Journ. Nerv. and Ment. Dis.*, Vol. xxxviii., No. 9, Sept. 1911, p. 513.

AN account is given here of the early symptoms of general paralysis as observed in 100 cases—90 males and 10 females. The average age was forty-one years, and the average duration of the disease was about one year and eight months from the time they were first seen. Forty-five cases gave a history of syphilis and thirty-one others admitted the possibility. The average age of infection was about twenty-five, and about fourteen years elapsed before the first manifestations of the paresis.

The classical type of paresis, with delusions of grandeur, etc., is rare. The physical symptoms are more constant and more significant than the mental, the four most important being alteration of the knee jerks, pupillary anomalies (inequality or sluggish reactions), changes in speech and changes in hand-writing. Tremor, ataxia, apoplectiform seizures, optic atrophy, etc., may be added to the clinical picture, and are of considerable value in diagnosis.

A. NINIAN BRUCE.

PSYCHOTHERAPY IN MENTAL DISORDERS. WILLIAM GRAHAM, (630) *Journ. Ment. Sci.*, Oct. 1911.

THE various methods of psychotherapy are described: (1) Suggestion—waking and hypnotic; (2) therapeutic conversation; (3) psycho-analysis; (4) occupation; (5) re-education. A brief summary of work done under each of these headings is given, the fullest consideration being naturally devoted to psycho-analysis. The author is at one with Freud for the most part, but refuses to allow that a concealed sexual factor is at the root of all hysteria. He emphasises the importance of a thorough process of re-education, whichever of the above methods has been employed.

W. BOYD.

BOOKS AND PAMPHLETS RECEIVED.

Abbot, E. Stanley. "Meyer's Theory of the Psychogenic Origin of Dementia Præcox: a Criticism" (*Amer. Journ. of Insanity*, Vol. lxxviii., No. 1, July 1911, p. 15).

Dejerine, J., and Gauckler, E. "Les Manifestations Fonctionnelles des Psychonévroses. Leur Traitement par la Psychothérapie." Paris: Masson et Cie, 1911. Fr. 8.

Edinger, Ludwig. "Vorlesungen über den Bau der Nervösen Zentralorgane des Menschen und der Tiere." Leipzig: F. C. W. Vogel. M. 18; gebund, M. 19.75.

Hyslop, Theo. B. "Hunterian Lecture on Intracranial Murmurs in their Relationship to Tinnitus Aurium" (*Lancet*, Oct. 14, 1911).

Kidd, Leonard J. "Afferent Fibres in Ventral Spinal Roots" (*Brit. Med. Journ.*, Aug. 19, 1911).

Maier, Hans W. "Die Nordamerikanischen Gesetze gegen die Vererbung von Verbrechen und Geistesstörung und deren Anwendung," and

Oberholzer Emil. "Kastration und Sterilisation von Geisteskranken in der Schweiz" (*Jurist.-psychiat. Grenzfragen*, Bd. viii., H. 1-3. M. 3.40.

Mott, F. W. "Archives of Neurology and Psychiatry" (*The Pathological Laboratory of the London County Asylums, Claybury, Essex*, Vol. v., 1911).

Mugden, Franz. "Periodizität und periodische Geistesstörungen" (*Samml. a. d. Geb. Nerven- und Geisteskrankheiten*, Bd. ix., H. 4, p. 1). M. 0.75.

Nageotte, J. "Betrachtungen über den tatsächlichen Bau und die künstlich hervorgerufenen Deformationen der markhaltigen Nervenfasern" (*Arch. f. Mikr. Anat.*, Bd. 77, 1911, p. 245).

Nageotte, J. "Rôle des Corps Granuleux dans la Phagocytose du Neurite au cours de la dégénération wallérienne" (*Compt. Rend. d. l. Soc. de Biol.*, Tome lxxi., Juillet 29, 1911, p. 251).

Prince, Morton. "Cerebral Localization from the Point of View of Functions and Symptoms" (*Journ. Nerv. and Ment. Dis.*, Vol. xxxvii., No. 6, June 1910, p. 337).

Williamson, R. T. "Cerebral Tumour affecting the Basal Ganglia on the Left Side and both Temporo-sphenoidal Lobes; Flaccid Paralysis; Changes in the Spinal Posterior Nerve Root Fibres." "Recent Advances in the Surgical Treatment of Spinal Tumours" (*Med. Chron.*, Aug. 1911).

Government Hospital for the Insane, Washington, Bulletin No. 3. Edited by William A. White, M.D., Superintendent.

Maryland Psychiatric Quarterly, October 1911, Vol. i., No. 2.

The Medical Officer, Vol. vi., No. 13, Sept. 23, 1911.

Paris Médical. "Numéro consacré à la Neurologie, la Psychiatrie et la Médecine légale," No. 45, October 7, 1911.

"Talleres Gráficos de la penitenciaría Nacional, 1910 and 1911."

Agote, Luis. "Nuevo Método Gráfico para Fijar la Herencia."

Ballvé, Antonio. "Primer Censo Carcelario. Resultados Generales."

Claros, Armando. "Nuevas Tendencias Penales en el Congreso Penitenciario de Washington."

Gomez, Eusebio. "El Trabajo Carcelario."

Gomez, Eusebio. "Patronato de Excarcelados."

Rivarola, Rodolfa. "La Condena Condicional."

Sagarna, Antonio. "El Jurado en Materia Criminal."

Veyga, Tomas de. "La Reforma de la Justicia Argentina."

Veyga, Francisco de. "Los Auxiliares de la Delincuencia."

Veyga, Francisco de. "Los 'Lunfardos.' Psicología de los Delincuentes Profesionales."

Review of Neurology and Psychiatry

Original Articles

REPORT OF A CASE OF HEREDITARY MUSCULAR ATROPHY OF THE CHARCOT - MARIE - TOOTH TYPE, ASSOCIATED WITH CATARACT.

By ARTHUR S. HAMILTON, M.D.,

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(Read in abstract at a meeting of the Minnesota Neurological Society,
October 27, 1910.)

HEREDITARY diseases are by no means uncommon, either in the nervous system or in the eye, but the association of these conditions in the same individual is so rare as to justify the report of the following cases:—

Family History.—The great-great-grandparents, of Pennsylvania German extraction, were people of excellent health and good habits, and there is no record of their having had any ocular or nervous trouble. The paternal grandfather died at seventy-six, the paternal grandmother at seventy-eight, the maternal grandfather at seventy-five, the maternal grandmother at seventy-nine, and all died of old age according to the history given. All were temperate, and none had any nervous or

mental trouble. The maternal grandfather (see Chart No. 1) had a cataract of one eye at thirty, and of the other at sixty. The father died of heart disease at sixty-two. He had been temperate and, aside from his heart trouble, had been well.

The maternal grandparents had two sons and six daughters, the history of whom is as follows:—

A. Female. Died at seventy-six. Had had double cataract for twenty-five years. Was physically weak, especially in her hands; and a little cold made her fingers stiff and numb. There was a slight impediment in her speech. She was married and had three sons and one daughter.

(1) Male. Slightly affected in speech and in muscular power of the hands. No cataract or mental defect.

(2) Male. Was badly affected in early life. Was very weak in his hands and awkward in all his movements. Speech much involved. Cataract in one eye at eighteen, and committed suicide at eighteen or twenty.

(3) Male. Has had speech defect from childhood. Makes himself understood with difficulty. No cataract, but some atrophy of hands, arms, feet, and legs. Is a good business man and now over fifty years of age. He is considered by the family as having the nervous involvement.

(4) Female. Normal mentally. Double cataract at thirty-five. Little or no speech defect. Awkward in all her movements and had practically no power in her hands.

B. Female. Died at sixty-five. No cataract or nervous involvement. Married and had one son and two daughters.

(1) Female. Died in infancy. Cause unknown.

(2) Male. Living and well at fifty-four. Married and has healthy children.

(3) Female. Living and well.

C. Male. Died at twenty-five of typhoid fever. No disturbance of any kind. Had been married and had two healthy daughters.

D. Female. Died at fifty-five. Never as bright as the others and did not improve in this respect in the course of years. Hands were weak and awkward, and the cold made them stiff. Cold also would "thicken her tongue" and make her already

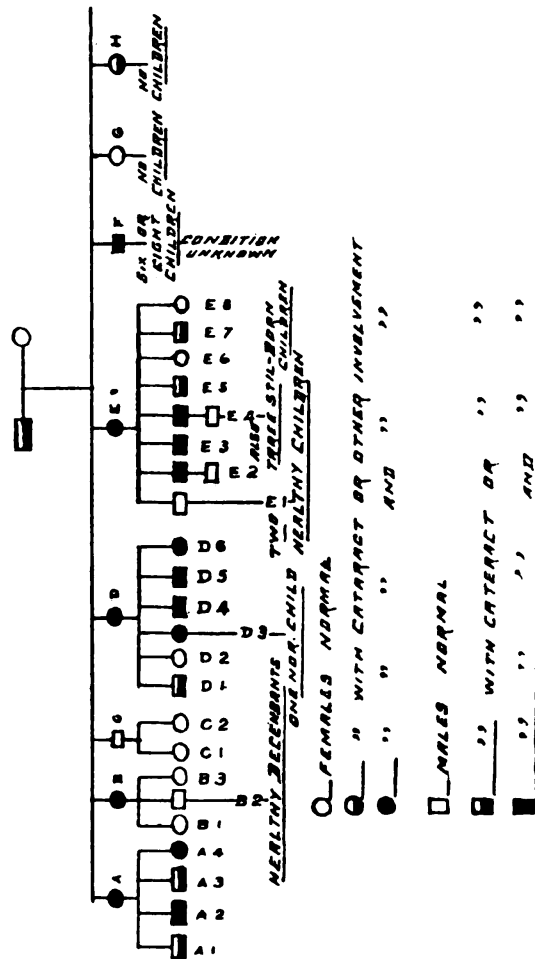


CHART No. 1.

To illustrate Dr Arthur S. Hamilton's Paper.

CASE OF HEREDITARY MUSCULAR ATROPHY 647

poor articulation even worse. Single cataract at about forty. Was married and had six children.

- (1) Male. Normal in childhood, but at fifteen "was a wreck." His hands and feet were practically paralysed, and his mind and speech were much affected. Died of intercurrent disorder.
- (2) Female. Always normal.
- (3) Female. Weak mentally and physically. Double cataract at twenty-five. Speech impaired. Hands and feet practically powerless. Married and had one normal child.
- (4) Male. Always deficient mentally and physically. Hands and feet paralysed. Speech defect. One cataract.
- (5) Male. Always normal.
- (6) Female. Always normal.

E. Female. Living at sixty-nine. She has had some mental disturbance for twenty years. Her vision is poor in both eyes. The muscular power in her hands is lessened, and the hands often become cold. Speech is unimpaired. She has had six sons and two daughters.

- (1) Male. Living and well at forty-nine. Is married and has two healthy children.
- (2) Male. Living at forty-four, and mentally a little affected. Muscular power in hands and legs greatly impaired. Gait awkward. Five years ago had a single cataract removed. Speech not involved. Is married and had one son who died at eight years of age, possibly of tuberculosis.
- (3) Male. Age forty-two. Mental condition fair. Has had trouble with locomotion for fifteen years, and the muscles of his hands and arms and, especially, of his feet and legs, are atrophied. He cannot rise from a chair without aid from his hands, and on first rising he cannot stand. Does better in locomotion after a moment's trial. Articulation very poor. Has double cataract and diabetes. Is married, but his wife has left him and he has no children.
- (4) Present patient. (See later record herein.)
- (5) Male, age twenty-eight, single. Never well endowed

mentally, and of late years is deteriorating. He had great difficulty in learning to articulate properly, but finally reached a point where he could succeed in making himself understood. This ability he is slowly losing. Has always been a little delicate in health. Has a good grip in his hands, but is very awkward in his finger movements. There is no evidence of cataract.

- (6) Female. Died at seven years of age, following scarlet fever.
- (7) Male. Died at thirty of appendicitis. Had not been married. His mental power had always been limited, and he had lost muscular power in his hands and feet. Evidence as to speech and cataract is uncertain.
- (8) Female, single. Living and perfectly well, except for a floating kidney.

F. Male. Died at fifty. Was normal up to twenty-five or later. After that lost power in his hands and developed an awkward gait. Seemed prematurely old. Retained fair intellectual power, but was "peculiar." No speech defect. Eventually double cataract appeared. His hands were always cold and clammy, and he complained that they were numb and stiff if they were chilled. Was married and had six or eight children. Nothing positive is known as to the condition of these.

G. Female. Died at thirty-five. Always normal. Married, but had no children.

H. Female. Died at thirty-five. Married, but had no children. Always a little deficient mentally.

The normal brother (*E* 1), who gives this history, states that few, if any, of these people realise the seriousness of their condition. None, except possibly *A* 2, has seemed to have any conception of its oncoming, until so far gone mentally that he was no longer able to realise its importance. The informant has never known one who voluntarily refrained from marrying on account of it. He also states that in his judgment many of those in whom the cataract apparently developed later in life were really affected from birth, and had never known normal vision. There is no evidence indicating that rickets occurred in any member of the family.

Personal History of Present Patient (E 4).—Male; age

38 ; married ; farmer. His general health has been very good. He walked and talked at the usual age, as have all his relatives except those that were congenitally affected. He was never seriously injured. Had measles at nine or ten, but cannot recall any other children's ailments. He denies venereal disease, and has never used liquor. Smoked moderately up to twenty-five, but rather excessively since that time. Has always been a hard worker. Never could learn very well from books, but remembered fairly well the things he heard. Memory not now so good. Lives on a farm, but has not been successful. He married a healthy German woman who has had three still-born children. One child is living and well at the age of four and one half years.

At fifteen years of age the patient first noticed that he did not have a good grip in his hands. Later he had pain in his hips and calves, and some loss of control in these muscles. Pain is still present on exertion. The loss of power in his hands and arms, and feet and legs, has gradually grown worse, especially during the last fifteen years. No speech defect. Sixteen years ago he received a punctured wound in the left eye ; since then the sight has been much impaired and of late has grown worse, due to a developing cataract. For several years sight has been failing in the right eye, and eight months ago he became totally blind in that eye. Six weeks ago Dr F. C. Todd, of Minneapolis, removed a cataract with good vision resulting.¹

Physical Examination.—He is a large, well-nourished man, with extraordinarily broad shoulders and long arms : height, 5 ft. 8 in. ; weight, 200 lbs. Complexion dark. Skin healthy. No notable scars. Head small and narrow. Ears normal in appearance, and hearing good. The face has the look of premature old age to a marked degree. There is a scar over the left cornea, and the pupillary space is obscured by this. The right pupil is widely dilated by artificial means, and a scar on the edge of the cornea indicates the point of incision for the removal of the lens. Iridectomy has been done. Vision is good in the right eye and absent in the left. Examination of the nose, palate, and pharynx is negative. The tongue is coated,

¹ I am informed by the brother that four other members of this family, operated on for cataract, and of whom he has personal knowledge, have had very poor results.

much marked at the edges, and possibly a little atrophic. Heart and lungs entirely normal. Pulse, 105, regular, and moderately full and strong. Radial and temporal arteries not thickened. Temperature, 98.6° F. Appetite excellent, and digestion fair. Bowels moderately constipated. Abdominal wall pendulous and fatty. Area of liver dullness normal. He passes urine about twelve times per day; usually once at night. No enuresis. No pain in urination. Does not think the total amount of urine is increased. Urine clear, amber, and strongly acid; sp. gr. 1028; no albumin; no sugar; no pus, casts or blood.

Mental and Nervous Condition.—He is cheerful in disposition and his face always wears a childishly happy, contented look. He is perfectly oriented as to time, place, and surroundings, but has an indifferent memory and intellect. Attends to what is said. Comprehension and relevancy fair. Is rather easily made angry. He complains of a little pain in his calves, if he works hard, and, at times, over his entire back. No vertigo. The right pupil reacts only fairly to light (probably owing to the influence of atropine). Eye movements normal; no nystagmus; no double vision or strabismus. Lids normal in appearance. Taste and smell normal. Sensibility to touch, pressure, pain, heat, and cold normal. No paresthesia or tenderness or thickening along the nerves. No vasomotor trouble. Patellar, Achilles, biceps and triceps reflexes, and reflexes of forearm all absent. No patellar or ankle clonus. Upper, middle, and lower abdominal and cremasteric and plantar reflexes all normal. No Romberg. Co-ordination good. Muscle sense normal. Muscles of shoulder (including deltoid), back, thighs, and calves well developed. Moderate atrophy of triceps, of anterior tibial and of thenar and of hypothenar muscles. Very marked atrophy of the biceps, of all the forearm muscles and of the interossei. He cannot shut the fingers into the palm completely, and there is no grip registered on the dynamometer in either hand. Very little power in the biceps or anterior tibial muscles; fair power in the triceps and thenar muscles and good power in the calves. He walks awkwardly and with feet wide apart. In progressing he swings the foot inward and forward, drags the toes and brings the foot down with a slap. Buttons his clothes with much difficulty. Shuts and winks both eyes and draws his mouth to the right in

a normal manner, but has very little power to draw the mouth to the left. The atrophic muscles are flaccid, and there is no reaction in the forearms, hands, or anterior tibials to the faradic or galvanic current. Both biceps show reaction of degeneration, and there is marked diminution of electric excitability in both triceps. No fibrillary twitching noted. No tremors or contractions. No dribbling of urine. He has full control of the bowels. He sleeps fairly well; rarely dreams. Articulation normal.

Since the opportunity offered to make a study of the individual here recorded, I have made repeated attempts to see some of the other members of this family, but they have invariably declined to be seen and have even refused to give any further information. There has been no opportunity, therefore, to verify the statement made by the relatives, as I should like to have done, though I have no doubt of its substantial accuracy.

In a prolonged search of the literature to learn if other cases of the same sort, and, especially, if other members of the same family might have been recorded, I met with only partial success, though it seemed not improbable that the cases of familial cataract, recorded by Drs Risley and Hansell of Philadelphia, might be members of the same family. Dr Risley, in a discussion of Dr Wood's (1) paper on hereditary cataract, referred to four cases on which he had operated at Wills' Eye Hospital, all members of a Pennsylvania German family, and all with more or less weak intellects. Dr Risley has kindly looked up for me the record of these cases in the Wills' Eye Hospital, and finds that, in addition to the above condition, all had shuffling gait and nearly all had disturbed speech.

There was nothing in Hansell's (2) cases to connect them with mine, except the existence of familial cataract and that they were of Pennsylvania German extraction.

In a personal letter Dr Edward Kerr, of East Downingtown, Pa., has given me the following facts concerning the presence of cataract, also in a Pennsylvania German family:—A woman, having had double cataract, had one son and two daughters. Nothing is said as to the son, but his children's eyes are normal, though the children themselves are all of deficient mentality and stature. One daughter had a child, which was normal at the time of writing. The other daughter married a confirmed alco-

holic, and they have had ten children, all of whom have had cataract save one, and that was a weak-minded, knock-kneed, enormously fat boy. One of the children, a girl, is married and has a baby, who has already been operated on for cataract.

At the suggestion of Dr Kerr I wrote to Dr H. H. Rothrock, of West Chester, Pa., who informed me that he had had two cases from this family. One was a congenital case, the baby mentioned by Kerr, and the other was one of Hansell's former cases, and both belonged to Kerr's family. Both were below normal mentally, especially the baby. The cases of Hansell, Kerr and Rothrock, therefore, are from the same family, and it is probable that Risley's and mine have a similar origin, though in my cases, the descent being through the female side, the family name has been changed, and, as I am refused further information, the identification must remain incomplete.

Aside from the cases above mentioned, I can find no reference in literature to a condition like that here recorded, and I am additionally assured as to its rarity through personal communications from Dr Nettleship and Dr Alfred Saenger.

That the eye and the brain should be intimately associated in their clinical manifestations, however, is readily understood when one considers how closely the two are connected in their origin, their anatomical position, and their functional relation. The occurrence of amaurotic family idiocy, of hereditary optic neuritis, of family ophthalmoplegia, and of nystagmus in congenital cataract and albinism, all emphasise this connection, to say nothing of such conditions as papillitis in brain tumour.

Even in the field of mental medicine there seems to be some connection between the eye condition and the nervous system. In a study of 578 cases of more or less high-grade mental deficiency, Gelf (3) found only 27·5 per cent. with normal eyes, and, in 53 idiots, Clark and Cohen (4) found only two with normal fundus appearances. In dementia præcox, Clark and Tyson (5) found a fairly constant eye syndrome. Pearce, Rankine, and Ormond (6) report 28 individuals with mongolian imbecility, of whom 19 had lens opacities more or less complete.

To Saemisch (7) and to Arlt (8) has been given the credit of first calling attention to the relation of cataract to antecedent attacks of spasm, but it would appear that epilepsy and tetany, both of which are now recognised as occurring not infrequently

with cataract, were at first not clearly differentiated, and among certain of the early writers it is difficult to tell to which form of spasm reference is made. In 1872 Logetschnikow (9) referred to observations in 15 individuals where, with general clonic convulsions, cataract also appeared. Though in 14 of these instances the convulsion preceded the cataract, the author believed both were due to an underlying condition, and not that the cataract depended on the convulsions. Schmidt-Rimpler (10) reported 27 cases of total cataract developed between sixteen and forty-eight, where, in 22, convulsions had previously occurred, and recent literature contains a number of more or less similar cases. Thomas (11) refers to cataract following hysterical attacks.

Michel (12), Meynert (13), and Wettendorf (14) were at least among the earliest to point out the connection between tetany, positively identified, and cataract. Freund (15) examined 10 cases of tetany, and found 3 with beginning lens trouble. He called special attention to trophic disturbances in connection with tetany, such as necrosis of nails and loss of hair, and thought a nutritional disturbance in the epithelial tissues could produce cataract, tetany, and rickets. Zirm (16) also has emphasised the connection between cataract and nutritional disturbances. Hyperemia of the fundus and cloudiness of the papilla in tetany had been pointed out by Küssmaul (17) as early as 1872.

As to just how frequently, however, the different neurologic conditions have been found to accompany cataract, and especially hereditary cataract, there is considerable difference of opinion. Pisenti (18), in speaking of congenital family cataract, says that, while neuropathic tendency cannot always be demonstrated, it is possible in the majority of cases, and he presents a cataractous family with a very marked tendency to hydrocephalus, imbecility, insanity, epilepsy, alcoholism, and nystagmus. Gunn (19) comments on the same subject, and reports some cases of cataract (not all familial) where a variety of neurologic conditions occurred in the same patients. On the other hand, Oliver (20), in a study of 3436 cases of cataract operated on at Wills' Eye Hospital, does not mention any neurologic complications, though it should be stated that congenital cases were excluded from consideration. Moreover, in the familial cataracts reported in this country by Stricker (21), Miliken (22), Wood (1), Williams (23), Baker (24),

Zentmayer (25), Dickey (26), Rublee (27), Brazeau (28), Chance (29), Jelks (30), Wilson (31), Cheatham (32), and Greene (33), no neurologic conditions of any consequence are mentioned, except in the cases of Greene.

In the most excellent and complete study of a family with hereditary congenital cataract with which I am familiar, Nettleship and Ogilvie (34) speak of the relatively high intellectual standard of the members, and out of 300 or more individuals studied they found only one neurologic case, a man said to be epileptic. Nevertheless, a careful search of the different cases and articles referred to in Nettleship's (35 and 36) elaborate study of the subject of hereditary cataract, to which I am indebted for many things given herein, reveals a number of instances¹ where different neurologic conditions have appeared in the family record. That the proportion of neurologic cases is larger than would be true in a like number of individuals selected indiscriminately seems to me undoubted, and I believe the weight of opinion is in favour of the contention that hereditary cataract is accompanied not infrequently by other deficiencies especially in the nervous system. Moreover, in Nettleship's (35 and 36) cases it is interesting to observe how many of the children have died in infancy.

Of the different cases that have come under my observation since beginning this study, no others are so much like my own as those of Lange (38) and Bertolotti (39). Lange (38) has reported a family where, among eight children, three are dead of indifferent conditions, one died with cataracts and atrophy of the Werdnig-Hoffman type, two are living with the same condition, and two are well. Bertolotti (39) reports an instance where three brothers married three sisters—all being cousins in the third degree. Two of their descendants (first cousins) married, and are the parents of the three children described. All developed during early childhood a condition of progressive

¹ The following are especially noteworthy instances:—Westhoff (37), 6 children with three cases of cataract and two of convulsions; Nettleship (35, p. 37), 6 children with two cases of cataract and one of convulsions; Nettleship (35, p. 52), 6 children with two cases of cataract and one of convulsions; Nettleship (35, p. 53), 4 children with two cases of cataract, both having convulsions; Nettleship (25, p. 53), 3 children, all with cataracts and convulsions; Greene (33), 71 individuals with twenty-nine cases of cataract, including one insane person, and three others intellectually dull.

muscular atrophy of the Charcot-Marie-Tooth type. In addition, all presented marked mental deficiency, optic-nerve atrophies, ocular palsies, and bulbo-pontine symptoms. In neither Lange's nor Bertolotti's families was there any similar conditions in the ancestors.

In Bertolotti's opinion the eye phenomena are simply a part of an extended progressive disease, the hereditary alterations having extended to several systems, and this opinion he has fortified by a very careful study of the related neurological literature, including the well-known cases of Higier (40) and Freud (41).

Following the view of Bertolotti, then, the family here reported is an instance of an hereditary tendency to degeneration in the nervous system, very widespread, and involving in most of the affected individuals both the central and peripheral nervous systems, but in some instances chiefly the cerebral and in some mainly the spinoneuritic, and showing clear intermediate forms. In Bertolotti's family the tendency to spinoneuritic degeneracy appeared to be more firmly fixed than the tendency to the other phenomena, whereas in my family the cataract, for example, occurred almost as constantly as the atrophy of the hands and feet. Whether, then, in my family one is to look upon these conditions as constituting two distinct hereditary diseases in the same individual or merely as one widespread familial malady, is a matter of little practical consequence. The latter appears to be the more logical view, though the tendency to the development of two distinct symptoms-complex is well fixed.

Assuming that the family history as obtained is correct, the number of affected individuals affords an interesting study in heredity in certain directions.

In the history given, thirty individuals are mentioned, exclusive of certain groups of children as to whose condition nothing is said. Of the thirty, one died in infancy and one at seven years, and these may, therefore, be excluded as not having reached a sufficiently mature age to determine their susceptibility. Of the 28 remaining, there are 16 males and 12 females; and of these, 12 males and 6 females developed the disease, showing a considerably greater susceptibility on the part of the males. In Dyer's (42) and Appenzeller's (43) cases with familial cataract, only males were involved, while in Galezowski's

(44) and Müller's (45) families only females acquired the disease.

In the seven families in my record, where the disease was transmitted, it was five times through females and only twice through males. This, however, was not necessarily due to any loss of procreative power on the part of the males. It may well, indeed, have been accidental, owing to the small number of family groups considered, and also to the fact that among the affected males, in three instances the condition of the children could not be determined, owing to ignorance of the facts in one case, to the early death of the children in another, and to their lack of maturity in another. Nettleship (35) found transmission in both senile and presenile cataracts more common through the female than the male. As is the general rule in many familial diseases, in no instance where the chain of descent had once been broken did the disease reassert itself.

In 11 marriages there were 43 children, but four families produced 29 of these. Two marriages were sterile, and in one instance it was not known if there was any offspring. Hutchinson (46) and others have referred to the remarkable prolificity of certain families in which familial diseases had appeared, and I have observed the same thing in certain families with chronic progressive or Huntington's chorea. Nevertheless there is a distinct tendency for families with hereditary disease to become extinct, either through the process of anticipation, whereby the members become diseased before reaching the age of marriage, or through the failure of individuals, even though married, to have offspring. Prepotency in the normal parent is also always a possible means of eradicating the disease. Whether this latter affords a means of permanent eradication is a question. If not, atavistic development may explain how isolated cases of a disease, usually clearly hereditary, may appear.

In four individuals all of the conditions considered, namely, cataract, atrophy, speech-defect and mental impairment, were present. One individual with cataract only and one with mental defect only were present. The latter must naturally be looked upon as a doubtful case of the disease under consideration. Of the 28, 5 had single cataract and 7 had double cataract and 16 had atrophy. There is not sufficient evidence to determine if the cataract appeared at an increasingly early age in succeeding

generations, though this condition of anticipation has been referred to by others, in cases of hereditary cataract not associated with special neurologic conditions, particularly in Greene's (33) and Gjersing's (47) families. There is also some doubt, as has been suggested by my informant, as to whether the disease in some instances may not have been congenital, though not so recognised by the patient. Nettleship and Ogilvie (34) note that certain individuals with "typical opacity refused to believe that their eyes were not quite perfect."

Consanguinity has been mentioned not uncommonly as a cause of hereditary cataract, as well as of other familial diseases, and is seen in the families of Cheatham (32), Hunter (48), Hirschberg (49), and Appenzeller (43), among others. The latter is especially interesting, since, in this instance, a woman, married to a man not related to her, had children, all of whom had good eyesight. She later married her cousin, and by him had three children, all with double congenital cataract. Bertolotti's (39) family shows consanguinity to an extraordinary degree, though it cannot be classed as an instance of hereditary cataract. In nine examples of familial congenital cataract collected by Nettleship (35), including Appenzeller's, there were four instances of marriage of first cousins. Nevertheless, Nettleship does not look upon consanguinity as a common cause of cataract, and says it is rare, except in complete congenital familial cataracts. He states, further, that we often mistake the effect of atavism, which is intensified by consanguinity, for the effect of consanguinity itself. In the Betts family, reported by Nettleship (35), where out of 100 individuals, 30 were known to have cataract, several cousins married, and in their offspring there were no cataracts, whereas in no instance where cataract appeared had there been a marriage of cousins.

In one instance (*E*) in my family all the cases in the same childship occurred consecutively, in two other instances (maternal grandparents and *D*) this was not true, and in another (*A*) there were no healthy children to intervene.

Rickets has been a common condition present in the cases of cataract reported by different authors, particularly Freund (15) and Zirm (16), but it was not present in mine.

As to the form of atrophy in my family there is much room for discussion, for, as has been pointed out by many writers, a

positive differential diagnosis between certain forms of peripheral muscular atrophy is almost impossible without an autopsy. There was no evidence of myotonia elicited in my patient at the time of the examination, but the frequent reference to "stiffness" and "awkwardness" in the different members of the family, along with the atrophy, suggests the possibility that these cases belong with the group of myotonia atrophica. The two conditions, however, which suggest themselves as most probable are the peroneal or Charcot-Marie-Tooth type of progressive muscular atrophy, and the distal type of myopathy, described especially by Gowers (50) and Spiller (51). Batten (52) gives the following as important, though not necessarily final, points in making a differential diagnosis between these two forms: "(1) If there is alteration of sensation in the peripheral portion of the limbs, it is a point strongly in favour of the nervous origin of the disease; and (2) if the facial muscles are affected, it is a point strongly in favour of the muscular origin of the disease." Alteration of sensation was certainly not present in my case, and there was also no such typical involvement of the facial muscles as to constitute the mask-like myopathic face. On the other hand, the presence of well-developed mental symptoms in my patient, as well as in many others of his family, the frequent occurrence of speech-defect among them, and the well-known fact that many apparently undoubted cases of the peroneal type of myelopathy have been reported without sensory trouble, make a fairly clear diagnosis of the Charcot-Marie-Tooth type of muscular atrophy in the family here recorded.

Since this paper was placed in the hands of the publisher my attention has been called to Dr J. Goodwin Greenfield's report on myotonia atrophica and cataract in this journal under date of April 1911.

In a family of thirteen children, reported by Greenfield, two had developed cataract and myotonia atrophica, three had myotonia atrophica, two had cataracts without myotonia atrophica, and six were normal. There was a history of cataract on the father's side, but no cases of myotonia atrophica on either the father's or mother's side. Though the condition of these patients was very much like that of mine, Greenfield has classified the nervous trouble under the head myotonia

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atrophica. He is also of the opinion that Lange's patients belong under the head of myopathy rather than myelopathy.

In a very recent number of the *Journal of the American Medical Association* (Sept. 20, 1911) Drs Foster Kennedy and C. P. Oberndorf have reported a patient with myotonia atrophica and bilateral cataract, both coming on at about the same time, but without the appearance of either condition in the ancestry.

With the permission of Dr Louis Dunn, of Minneapolis, in August 1911, I saw two members of a family with a history somewhat like Bertolotti's patients. There is nothing obtainable in the ancestry that seems to bear on the matter. The parents had eight children, and there were two miscarriages. All the children are in good physical and mental health except the first, seventh, and eighth.

The first child, a son, in early childhood developed progressive loss of vision, and finally became blind. At ten years of age he began to lose power in his feet and legs, and two years later in his hands and arms, so that eventually he was entirely unable to get about. At thirteen he had convulsions, and these continued and grew more frequent and severe. He died a few years later totally blind, demented, and with practically complete loss of power in the hands and arms and feet and legs. The mother thinks there was a "moderate atrophy" of the muscles of the arms and legs.

The seventh child, a son, was considered normal up to four years old. He then gradually lost the power of sight. At seven he had a convulsion, and two years ago began to lose power in his feet and legs. At present he cannot stand without assistance. The muscular power in his arms and hands is impaired, but he is able, for example, to feed himself. There is a very marked optic nerve degeneration, and considerable atrophy of the muscles of the hands and forearms, and of the feet and legs. The deep reflexes in the arms and legs are very feeble. He is demented, and has frequent severe general convulsions.

The eighth child, a son, now eight years old, was well up to six years of age, when his parents first noticed some trouble in sight. This has progressed, and at present he is able to get about, though he sometimes falls; but he is entirely unable to see to read or write. He has a moderate degree of degeneration in the optic nerve. There is no atrophy of any of the muscles

observable, and he has had no convulsions, but he is evidently a little below par mentally.

A detailed history of this family will appear later.

REFERENCES.

1. Wood. *Ophthalmic Record*, April 1906.
2. Hansell. *Ophthalmic Record*, June 1896.
3. Gelf. "Samml. a. d. Gebiete d. Augenh." Halle a. S., 1904.
4. Clark and Cohen. *Journ. Amer. Med. Assoc.*, Vol. liv., No. 116, April 16, 1910.
5. Clark and Tyson. *Journ. Amer. Med. Assoc.*, May 2, 1908.
6. Pearce, Rankine, and Ormond. *Brit. Med. Journ.*, July 23, 1910.
7. Saemisch. Quoted from Schmidt-Rimpler. *Klin. Monatsbl. f. Augenh.*, xxi.
8. Arlt. Quoted from Freund. *Wien. Med. Wochenschr.*, liv., No. 10, March 5, 1904.
9. Logetschnikow. *Klin. Monatsbl. f. Augenh.*, x., 1872, p. 351.
10. Schmidt-Rimpler. *Klin. Monatsbl. f. Augenh.*, xxi., p. 246.
11. Thomas. *Indian Med. Record*, xxiv., 1903, 150.
12. Michel. *Jahresbericht f. Ophthalmologie*, 1891.
13. Meynert. *Archiv f. Gynäkologie*, xxx., Hft. 3.
14. Wettendorf. *Wien. Med. Wochenschrift*, xlvii., Nos. 11 u. 12, 1897; *Beiträge z. Augenheilk.*, Bd. iv., p. 43 u. 563, 1899.
15. Freund. *Wien. Med. Wochenschr.*, liv., No. 10, March 5, 1904.
16. Zirm. *Arch. Ophth. N.Y.*, 1905, xxxiv., p. 637.
17. Küssmaul. *Berl. Klin. Wochenschr.*, 1872.
18. Pisenti. "Annales d'Oculistique," cxxiii., 1900, p. 354.
19. Gunn. *Ophthal. Review, London*, xvii., 129, 1898.
20. Oliver. *New York Med. Journ.*, lxxxiv., 1906, 917.
21. Stricker. "The Crystalline Lens System," p. 235. (Quoted from Nettleship.)
22. Miliken. *Amer. Journ. of Ophth.*, xxi., March 1904.
23. Williams. *St L.M.S. Journ.*, xxxviii., 1881, 368.
24. Baker. *Journ. Amer. Med. Assoc.*, Sept. 1892.
25. Zentmayer. *Ophthalmology*, Vol. iv., No. 4, July 1908.
26. Dickey. *N.Y. Med. Journ.*, lxiii., 1896, 181; *Journ. Amer. Med. Assoc.*, xxxii., 1899, 499; *West Virginia Med. Journ.*, Vol. i., No. 3, Dec. 1906.
27. Rublee. *Tr. Vermont Med. Soc.*, 1868, 73-75.
28. Brazeau. *Journ. Amer. Med. Assoc.*, July 1904.
29. Chance. *Arch. Ophth. N.Y.*, xxxvi., 1907.
30. Jelks. *Ophth. Record*, iv., 1894-5.
31. Wilson. *Journ. Ophth., Otol., Laryngol. N.Y.*, Oct. 1891.
32. Cheatham. "Med. Age," xxi, 1903, 681.
33. Greene. *Trans. Amer. Ophth. Soc.*, v. 1890.
34. Nettleship and Ogilvie. *Trans. Ophth. Soc.*, Oct. 1906, p. 6.

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35. Nettleship. *Royal London Ophth. Hosp. Reports*, xvi., Part 3, Oct. 1905.
36. Nettleship. *Royal London Ophth. Hosp. Reports*, xvi., Part 4, June 1906.
37. Westhoff. "Annales d'Oculistique," cix., p. 290, 1898.
38. Lange. *Deutsch. Zeit. f. Nervenheilk.*, Bd. 40, Hft. 1-2, 1910, S. 65.
39. Bertolotti. *Nouv. Icon. de la Salpêtrière*, March-April 1910, p. 97.
40. Higier. *Deutsch. Zeit. f. Nervenheilk.*, 1896.
41. Freud. *Neurolog. Centralblatt*, 1893.
42. Dyer. *Prov. Med. and Surg. Journ.*, 1846, 383.
43. Appenzeller. "Inaug. Dissert.," Tübingen, 1884.
44. Galezowski. Quoted from Nettleship (36).
45. Müller. *Arch. f. Ophth.*, ii., 2, 166.
46. Hutchinson. *Trans. Medico-Chirurgical Soc. of Edinburgh*, Vol. xix., March 7, 1900.
47. Gjersing. (Quoted from Nettleship.) *Ugeskrift f. Løger*, R. 3, Bd. 26, No. 18.
48. Hunter. *Lancet*, London, 1905, i., 1419.
49. Hirschberg. *Centralbl. f. prakt. Augenheilk.*, Leipzig, 1897, xxi., 271.
50. Gowers. *Brit. Med. Journ.*, 1902, ii., 89.
51. Spiller. *Journ. Nerv. and Ment. Dis.*, 1907, xxxiv., 14.
52. Batten. *The Quarterly Journ. of Med.*, Vol. iii., No. 11, April 1910.

CONGENITAL DEFICIENCY OF SPEECH AREAS.

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THERE is a condition occurring in children, of which a few cases have been recorded, under the label of congenital aphasia. Typical cases must be rare, but there will have been some cases unrecognised or unpublished. Mothers are notoriously unwilling to admit any mental defect in their offspring, and think the child will outgrow it. This is a pity, because it lessens the chance of early recognition, by consultation with a medical man, of cases in which suitable treatment (tuition) might be applied to remedy the defect. On the other hand, I have known great unpleasantness arise in the work of the general practitioner, who may attend the birth of a child and fail to detect that the infant was an idiot in the first year of life. Everyone knows that it is not easy to say, in many cases, exactly what the child is. But any child which does not make the usual varied infantile noises, grasp at bright and moving objects, evince

excitement at the sight of food and people living in the house, exhibit manifestations of temper when hungry or deprived of toys, kick its legs and smile, and before it reaches twelve months be able to say such words as "ba ba," "ta," "ta ta," "ma, ma," and make an attempt, parrot-like, to repeat after one easy words such as "bird," "dirty," "tick-tick," etc., pronounced approximately "ird," "teh-teh," and "tak-tak," should be viewed as one in which there is some degree of mental defect, or some congenital deficiency of the speech areas. Children vary in the development of their speech areas, and few of us have escaped the infant phenomenon of two years who could repeat elaborate phrases which others cannot do even at six and seven. The quickness of the child, apart from speech, reaching the ages of three, four, and five, should suggest what is the matter, as in the author's case. Word-deafness will produce an individual very like a mental deficient, or it may be a deaf mute, as in Mr Yearsley's case. When deformities due to rickets or other so-called degenerate stigmata are present, one is apt to be prejudiced. Any child reaching the age of five years, and not talking properly, should be taken in hand for complete investigation without any further waiting for it to talk; there is something radically wrong, for at this age a child should have quite a large vocabulary. The term congenital aphasia ought not to be applied to these conditions. The correct nomenclature is congenital deficiency of speech areas, since aphasia carries with it the association of more or less established function of speech areas and some subsequent thrombosis, embolism, tumour, hæmorrhage, meningitis, etc. In congenital cases, one or more of the speech areas subsequently to be trained for speech are destroyed or defective. That they are bilateral and developmental in origin is suggested by the fact that a diagnosis is made at all, since one could scarcely imagine better ground to work on than that of an infant to train the right (non-driving) side of the brain, to take on the work of the injured left (driving) side of the brain.

Cause.—Traumatism is rare in foetal life. Injury to the cranium during birth, which usually involves the Rolandic area, should give a definite history of birth palsy. Heredity very probably plays a part. During embryonic life a maldevelopment analogous with monstrosities may occur. During intra-

uterine life syphilis and infective fevers would produce conditions with postnatal results. Osler records a case of a pregnant woman well advanced dying from typhoid, in which labour had not commenced, and the foetus, removed post-mortem, showed a hæmorrhage in the centrum ovale. One must not forget that cases seen late, four or five years, may have memorised and indeed spoken some words of which little or no history can be obtained, and have suffered in early life from pneumococcal meningitis of the convexity of the brain, or extravasation of blood in the membranes, as in whooping-cough. Interference of development by thickening of membranes or changes in arteries might therefore produce the condition without any paralysis. It would be almost impossible to separate the true congenital from early postnatal cases. True aphasia, according to Byrom Bramwell, is a term applied to derangement of speech resulting from functional disturbance or organic disease of the higher speech mechanisms. By speech is meant vocal speech or its equivalent of educated persons, and does not include defects due to imperfections in the end organs, eye and ear.

Varieties of Aphasia.

Motor	{	Motor Vocal Aphasia	{ Cortical.
			{ Subcortical.
Sensory	{	Motor Writing Aphasia	{ Cortical.
			{ Subcortical.
	{	Auditory Aphasia	{ Cortical.
			{ Subcortical.
	{	Visual (reading) Aphasia	{ Cortical.
			{ Subcortical.

CASES.¹—I was consulted about a child, aged 5 years, by the mother on account of being unable to speak. The father of the child had a slight impediment in his speech, saying "mouf" for mouth. The father's brother suffered from epileptic fits. On examination of the child I found he could not utter one single word. When eight months old he had an attack of bronchitis and broncho-pneumonia; he then contracted whooping-cough and life was despaired of. The child had rickets, presenting pigeon breast, Harrison's sulcus, knock knees, and even at five the anterior

¹ Author's article, *British Medical Journal*, July 22, 1911.

fontenelle was not closed. Convergent squint was present and was common to the other children in the family. The boy was right-handed, could hear and understand spoken speech. He could run messages to neighbouring shops. He was obedient to his mother. He played with other children, fought, and took his place at table in his own particular chair and fed himself. I could not get him to speak a word. His sister of two years could use many words. The boy had been surrounded by speaking children during his short life. He phonated a sound like "ta!" or "ah!" suggestive of cleft palate, but the tongue and palate were normal. He had just commenced school and took a great interest in picture books. He could make crosses and strokes with a pencil. The sound "ta" did duty for "yes," "thank you," and indeed everything. He understood what was said to him, carrying out his mother's instructions as far as a child of five could do. He was fairly well nourished. He was always delighted when I visited the home, and ran to inform his mother, pointing and phonating his only sound. He made up his deficiency of speech by pantomime. He does not lip read. I gave commands so that my lips were unseen by him. "Look under the table and get the basket." He got it. "Pick the paper off the table." He picked it up and handed it to me, phonating. "Sit on the chair." He sat down. "Do you like pennies?" He held out his hand, and held open his pocket with the other, face beaming with delight. I allowed him to play with a Teddy bear, until he was content to leave it neglected at one end of the garden. While he was preoccupied with other toys along with another little boy, I went unobserved behind him and whispered, about one foot from his right ear, "Harold, go and get the Teddy bear." He wheeled round with alacrity and brought it to me.

Since there is complete wordlessness, evidences that he will read and write, and no word-deafness (beyond that which might occur in any child of five), I classify this as a case of motor vocal aphasia, subcortical variety (way out blocked).

Dr Eva McCall recorded two cases in *British Medical Journal*, May 13, 1911.

(My classification.)

1. Boy, age 12, cannot read, cannot write from dictation, could write his own name.	}	= Visual aphasia, cortical variety, motor writing aphasia a necessary concomitant.
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(My classification.)

2. Boy, age 8, not deaf to sounds, word deaf, able to talk imperfectly, no memory for words. } = Auditory aphasia, probably subcortical variety, with a memory for words intact, but way to it blocked.

Mr Macleod Yearsley, Royal Society of Medicine, March 26, 1909, and *British Medical Journal*, July 29, 1911, describes : —Girl, age 11, seen at deaf centre, having been at deaf school three years. Could produce no words on admission. Had only vowel hearing, otherwise normally intelligent. Seen three years after, she apparently relies on lip reading, but hears whispers at 5 ft., obeying "Pick up your glove," uttered behind her back ; is, however, uncertain and doubtful about all commands. Spontaneous speech slipshod and indistinct. Reproduced speech quite clear. Repeated questions put to her by ear but made no attempt to answer. Questions lip read, readily answered. Subsequently she learned to answer to questions by ear, but preferred to lip read. Voice became natural and no longer slipshod in speech. I classify this case as auditory aphasia, subcortical variety, way in partially blocked, with an intact auditory centre, partly developed by lip reading. Mr Yearsley holds also that the auditory receptive centre was intact, but its connections with the motor centres for speech were interrupted or undeveloped, the motor speech centre being developed by lip reading, the motor speech centre at the same time developing its connections with the auditory speech centres.

Abstracts

ANATOMY.

THE STRUCTURE OF THE CENTRAL SYMPATHETIC GANGLIA.

(631) (*Der Bau der zentralen sympathischen Ganglien.*) SERGIUS MICHAILOW, *Internat. Monatsschr. f. Anat. u. Physiol.*, Bd. xxviii., H. 1-3, 1911, p. 26.

A VERY full account of the structure of the nerve-cells in the peripheral and central ganglia of the sympathetic system in the mammalia is given here. The author distinguishes at least nine different types of nerve-cell. The first is not described. The second is round or oval in shape, multipolar, and possesses three different kinds of processes, a long filamentous axon process, a number (from one to twelve) of small club-shaped subcapsular dendrites, often containing pigment, and a smaller number of long dendritic processes which pass out between neighbouring cells and end by dividing into a large number of twigs, somewhat resembling a brush. The third type of cell is irregular in outline and usually unipolar or bipolar. The origin of the processes from the cell is often so gradual that it is difficult to tell where the cell ends and the dendrite begins, the axon process in many cases arising from a dendrite. The dendrites are of various lengths, and end with a typical form of end apparatus, usually of the nature of one or more flat expansions which may contain pigment. The fourth type of cell varies much in size and shape. From one to six processes pass out from the cell in all directions, one of which ultimately appears to become the axis cylinder. The type of end-organ is also characteristic, the dendrite dividing several times before its termination; upon these small swellings develop, the whole appearance resembling that of motor nerve-endings in muscle. Cells of this type are usually pigmented. The fifth type of cell is round or oval in outline, multipolar in form, and is intermediate in some respects between the second and third types of cell. The axis-cylinder process is filamentous and may arise from a dendrite. Two kinds of dendritic processes are found, the one short, club-shaped and subcapsular, often containing pigment, resembling those already described in the second type of cell, and the other long, somewhat coarse, and ending in plate-like expansions similar to those described in type three. These five types of cell are all to be found in the peripheral ganglia. The following four appear to be limited to the central ganglia. The first of these (type six) is multipolar, all the processes appear-

ing to be dendritic, an axis cylinder process being rarely discovered. These divide repeatedly, the smaller twigs freely anastomosing with each other and forming a spherical nest which encloses another cell. The seventh type is oval or irregular in outline and gives origin to two or more processes, one of which becomes the axis cylinder process, and the other, usually thick, divides soon into a large number of smaller dendrites, which also divide repeatedly, and anastomose freely and become applied to one or more nerve cells which they encircle like a crown. The eighth type is circular or oval, and gives rise to either one large process which divides immediately into many smaller ones, or these may arise separately from the cell. The smaller twigs anastomose very freely and form a complicated network, out of which the axon-process arises. The ninth type of cell is very irregular in outline, and gives rise to several processes of different thickness, some of which branch immediately and extend to no great length, others are long and end in numerous varicose end twigs. The axis cylinder process is long, and may give rise to numerous collaterals which end in plate-like organs.

Attention is also drawn to the appearance of two nuclei in one cell, and to the presence of strong protoplasmic bridges between neighbouring cells, connecting them together.

The intercapsular plexuses, and the pericapsular and pericellular networks, are also described, and the relationship to the sympathetic system of the smaller ganglia in connection with the cranial nerves (ciliary, otic, sphenopalatine, and submaxillary) is discussed.

The references to the literature are very full, the methods of staining are described, and the paper is illustrated by many coloured plates showing the different types of cells, etc.

A. NINIAN BRUCE.

REMARKS ON SOME POINTS IN THE FISSURATION OF
(632) **THE CEREBRUM (ILLUSTRATED BY THREE CHINESE**
BRAINS.) SYDNEY J. COLE, *Journ. Anat. and Physiol.*, Vol.
xlvi., Oct. 1911, pp. 54-68.

HERE are pictorial records of the fissural pattern of three Chinese brains—five line-drawings of each, comprising views of the convex and mesial surfaces of each hemisphere, and a view of the basal surface. The convex surface is shown in projection, after Kohlbrugge's manner, so as to include (besides the lateral aspect) a full view of the crest of the hemisphere and of the frontal and occipital poles. The pictures of the mesial and basal surfaces are tracings from photographs. Deep gyri are indicated conventionally. The drawings are not encumbered with names

of sulci, but Roman figures are used as aids in identifying sulci visible in two or more views of the same hemisphere, and depths of sulci in millimetres are given in Arabic figures. In the text no formal description is given, but notes on some features not pictorially revealed (*e.g.* sulci concealed within the Sylvian fissure).

Leaving these records to stand as a contribution to the published material for the study of the Chinese brain, the writer avoids discussion of the vexed question of racial characters, and avails himself of the opportunity afforded by the publication of these drawings to call attention to sulci in various positions on the convex surface of the frontal lobe, reminding him of similar sulci which in English brains he observes to run more or less parallel with the boundaries of histologically differentiated zones of cortex, in a manner analogous to that of the arcuate sulcus of apes. While tracing no real homology between these sulci, he is of opinion that an indirect relationship does exist between certain sulci of this region and histological differentiation of cortical areas; but the relationship is highly inconstant, and variously modified by other factors.

Some remarks are added on the sulcus lunatus and other sulci of the occipital region, in reference to their supposed significance as representatives of the Affenspalte in man.

AUTHOR'S ABSTRACT.

**HISTOLOGICAL OBSERVATIONS OF A NUCLEUS FOUND IN
(633) THE RHOMBENCEPHALON OF *SUS SCROPHA*. (Ricerche
istologiche sopra un nucleo riscontrato nel rombencefalo di
Sus Scropha.) E. LUNA, *Folia Neurobiologica*, Bd. 5, No. 1.**

THE nucleus in question is situated ventrally to the principal nucleus of Stilling. The cells are very large, almost twice the size of those of the nucleus of Stilling. Their form is polygonal: they have a single axis cylinder and the protoplasmic prolongations present no special features. The cells are surrounded by a dense fibrillar network. Some of the fibrils of this network terminate about the cell with terminal buds or with the masses of Held-Auerbach or with little ring formations. Other fibrils present preterminal buds and ringlets. The nucleus, besides the nucleolus and the membrane, shows a finely granular substance of a pale yellow colour, which generally forms a more or less complicated reticulum. The nucleus contains many argentophil bodies of various size, and similar granules are found in the nucleolus. The author notes that between the number of these granules in the nucleolus and the number in the nucleus there is an inverse relation which points to some common origin of these two groups.

F. GOLLA.

HISTOLOGICAL AND EXPERIMENTAL RESEARCHES ON THE
(634) **CHOROID PLEXUS.** (*Ricerche istologiche e sperimentali sui*
plessi coroidi.) G. B. PELIZZI, *Riv. speriment. di freniat.*, Vol.
37, F. 1-2, 1911.

THE choroid plexus of all vertebrates exhibits both functional and histological analogous characteristics. In every species the nucleus contains nucleoli, chromatin granules and filaments and clear spaces. The protoplasm contains granules which go to form droplets, and these droplets are seen in every stage of formation.

For a lengthy period of foetal life the choroid plexus contains abundant embryonic cells. These cells contain an accumulation of fatty droplets, with occasional droplets of fatty acid which are arranged round the nucleus. The fat of these two varieties of droplets gives rise to specific microchemical reactions. Some small and scarce droplets containing fat which reacts like the neutral droplets of the granular cells is found irregularly placed in the protoplasm that goes to form the choroid epithelium. Such granular cells and droplets disappear about birth, and are entirely absent during the earlier portion of extrauterine life. At the time of their disappearance the protoplasm begins to assume definite histological characters. It would appear that the elements just mentioned are of the nature of developmental cells which go to form one portion of the choroidal epithelium.

The epithelial cells secrete droplets which contain a fatty matter, giving an analogous microchemical reaction to those seen in the nuclear granulation. They appear to have their origin in the nucleus and to then grow at the expense of the cellular protoplasm. The deposition of droplets of fats, soaps, fatty acids and lipoids increases rapidly in the cell plasm after birth. These granules are to be regarded as products of cell metabolism of the central nervous system that the epithelial cells withdraw from the cerebro-spinal fluid. After grave intoxications or lesions of the central nervous system the deposit of granules is very markedly increased. Injection of alkalies favours the secretion of droplets into the cerebro-spinal fluid, whilst such secretion is diminished by injection of acids. It would appear that the cerebro-spinal fluid is formed in great part by lymphatic transudate whilst the epithelial cells secrete into it substances of great importance to the functional activity of the fluid. Extirpation of the choroid plexus in the frog gives rise to a condition of general torpor. After grave lesions of the nervous system the cells whose function it is to collect cellular detritus from the cerebro-spinal fluid become very evident and are loaded with granules. The origin of such cells is probably hæmatogenous. Numerous mast cells are found in the plexus and their number is increased after destruction of nervous tissue. The

use of Nilblau as a colouring agent gives excellent results in the study of the choroid plexus. The paper is illustrated by two coloured plates.

F. GOLLA.

THE PINEAL GLAND IN MAN. (*Sur la glande pinéale chez (635) l'homme.*) KRABBE, *Nouv. Icon. d. l. Salpét.*, July-August 1911, p. 257.

ANATOMICAL study based on 100 specimens. The parenchyma of the pineal gland consists of special cells—the pineal cells—in which a process which appears to be of a secretory nature occurs. Between these cells are a much smaller number of neuroglial cells. The secretory process is as follows:—In the nuclei of the pineal cell granules, staining feebly basophil, are found, which are shed into the surrounding protoplasm; thence they pass probably into intercellular spaces. This process is constantly found in the adult up to an advanced age. In the connective tissue of the gland are different sorts of cells, some of which resemble cells that in the cerebrum are found to contain products of disintegration. Others closely resemble mast-cells, and are present in the gland in much greater numbers than elsewhere in the brain.

S. A. K. WILSON.

ON THE MEDIAN ANTERIOR CEREBRAL ARTERY AS FOUND (636) AMONG THE INSANE. I. W. BLACKBURN, *Bulletin No. 3, Govt. Hosp. for the Insane, Washington, D.C.*, p. 15.

THIS anomaly is a reversion to the lower mammalian type. The vessel, when well developed, springs from the anterior communicating artery and curves upwards on the genu of the corpus callosum. It was found in 42 out of 400 cases of insanity, conditions of dementia being the most numerous. Associated abnormalities of the anterior cerebrals were frequently present. A brief comparative account of the circle of Willis is given.

A. L. TAYLOR.

PHYSIOLOGY.

ON THE QUESTION OF THE PRESENCE IN THE FROG OF (637) VASO-DILATOR FIBRES IN THE POSTERIOR ROOTS OF THE NERVES SUPPLYING THE FOOT AND IN THE SCIATIC NERVE. SOROKU OINUMA, *Journ. Physiol.*, Vol. xliii., Nos. 3 and 4, Nov. 1911, p. 343.

THE author concludes that in the frog the posterior roots of the eighth and ninth spinal nerves contain no vaso-dilator fibres for

the hind-limb. Since stimulation of the peripheral end of the cut sciatic nerve caused dilatation of vessels, the sciatic nerve must contain vaso-dilator fibres. The origin of these was not determined, but it was considered that they presumably belong to the sympathetic system.

A. NINIAN BRUCE.

ANALYSIS OF THE ROTATION-REFLEX IN THE FROG.

(638) W. MULDER. *Quart. Journ. Exp. Physiol.*, Vol. iv., No. 3, Oct. 1911, p. 231.

If a frog be placed on a horizontally turning disc, with its head towards the disc-edge, its head will be found to make a reflex movement which is directed against the sense of motion of the disc. This reflex finds its origin in the stimulating of the labyrinth by the circular acceleration. It is here found that the speed of this reflex is directly proportional to the amount of the stimulus, the relation not being logarithmic as is the case with sensations.

A. NINIAN BRUCE.

**THE PRESENCE IN THE CONNECTIVE TISSUE OF THE IRIS
(639) OF SPECIAL PIGMENT CELLS. THE INFLUENCE OF THE**

**ULTRA-VIOLET RAYS ON THE DEVELOPMENT OF THE
PIGMENT OF THE IRIS. (Présence dans le Tissu Conjonctif
de l'Iris de Cellules Spéciales à Pigment. Influence des Rayons
ultra-violet sur le développement du Pigment de l'Iris.)**
HORAND, *Rev. Neurol.*, No. 15, Août 15, 1911, p. 188.

THE author exposed the eyes of rabbits to the rays of a mercury vapour lamp for a series of ten exposures of fifteen minutes. The eyes were fixed at once, and cut in paraffin or cut immediately after freezing by CO₂.

A great amount of pigment was noticed, almost as much as in a melanotic sarcoma. Besides diffused pigment, special vesicular cells with evident nuclei and processes full of pigment were present, apparently true chromatophores such as exist in the chameleon. Ultra-violet rays, especially those from a mercury vapour lamp, and perhaps sunlight, as well as other unknown causes, can bring about hypertrophy of these cells to which the author ascribes a defensive rôle.

The article is illustrated by a microphotograph showing one of the chromatophores.

H. M. TRAQUAIR.

EXPERIMENTS ON THE RELATION OF THE THYROID TO

(640) **DIET.** REID HUNT, *Journ. Amer. Med. Assoc.*, Vol. lvii.
No. 13, Sept. 23, 1911, p. 1032.

THE author carried out further experiments on mice to show that certain diets have specific effects on the thyroid glands of the lower animals. He indicates that it would be interesting to see whether feeding with oatmeal and liver in cases of hypothyroidism, and their withdrawal from the diet in hyperthyroidism, would be beneficial to the patient. This applies mainly to the milder cases.

R. A. KRAUSE.

NOTE ON EXTIRPATION OF THE THYROID GLAND IN

(641) **MONKEYS.** HALFPENNY and GUNN, *Quart. Journ. Physiol.*,
Vol. iv., No. 3, Oct. 24, 1911, p. 237.

THE authors removed the thyroid and parathyroid glands in eight monkeys (*macacus rhesus*), all of which died from the sixth to the eighty-first day. After the operation four developed tetany, only one showed any puffiness of the face, and none were entirely free from symptoms. Many became very emaciated, and lack of proper nutrition, owing to various grades of paresis, and consequent difficulty in feeding, may have been a contributing cause of death in some cases. In one animal an attack of tetany appeared to have been induced by the administration of thyroid extract.

A. NINIAN BRUCE.

THE POSSIBLE VICARIOUS RELATIONSHIP BETWEEN THE

(642) **PITUITARY AND THYROID GLANDS.** SUTHERLAND
SIMPSON and ANDREW HUNTER, *Quart. Journ. Physiol.*, Vol. iv.,
No. 3, Oct. 24, 1911, p. 257.

COMPLETE removal of the thyroid gland in lambs from seven to eight months old and in adult sheep does not lead to the appearance of iodine in the pituitary, even after so long an interval as from five to six months. No evidence is thus found in favour of the view that in thyroid insufficiency the pituitary vicariously takes on its function, provided that it be correct that the iodine-containing substance of the thyroid represents its active secretion.

Compared with normal animals of the same age, some increase in the size of the pituitary in the thyroidectomised lambs and sheep was found, but the difference is not great—15 per cent. in the case of the lambs and 20 per cent. in the adult sheep.

A. NINIAN BRUCE.

**PRELIMINARY NOTE ON EXPERIMENTAL INVESTIGATIONS
(643) ON THE PITUITARY BODY.** HANDELSMANN and VICTOR
HORSLEY, *Brit. Med. Journ.*, Nov. 4, 1911, p. 1150.

A BRIEF account is here given of the results of experiments upon 54 animals (20 cats, 21 dogs and 13 monkeys), in which it was attempted to determine what influence a complete or partial extirpation of the pituitary gland exercised on the organism. The gland was reached by either of two methods—(1) temporal and (2) palatal; and in some cases the gland was separated from the base of the brain, and in others it was cauterised. About half of the animals showed cerebral symptoms, which gradually passed away. Removal was found to be complete in fifteen cases, of which eight died within forty-eight hours from shock, hæmorrhage, etc., three died within four days with none of the symptoms regarded by Cushing as characteristic of a cachexia, and of the remaining four, three died naturally on the thirteenth, fifteenth, and thirty-ninth days, while one animal was killed in good health on the one hundred and fifteenth day. The authors, therefore, conclude that removal of the function of the gland is not necessarily fatal, as has been affirmed by Cushing.

Slight glycosuria was observed in two instances out of seven cases of complete or almost complete extirpation, and no changes were observed in other internal secretion glands which could with certainty be attributed to the lesions of the hypophysis.

A. NINIAN BRUCE.

ON THE ASSOCIATION FUNCTIONS OF THE CEREBRUM.
(644) S. I. FRANZ, *Bulletin No. 3, Govt. Hosp. for the Insane,*
Washington, D.C., p. 5.

ALL the physiological and clinical data point to the use of the anterior (frontal) association areas for the initiation of complex motor processes and of the posterior association areas for the combination or association of sensory processes. The author believes that the production of an association is dependent on at least six neurones or sets of neurones—*e.g.* in a visuo-motor association, the following areas are successively connected: visuo-sensory, visuo-psychic, posterior association, anterior association, intermediate precentral, precentral. That both association areas function in the same cycle is established by the phenomena of aphasia and apraxia. The presence of mental defects accompanied by disease or destruction of either is a significant fact. When a habit is formed the cycle of impulses is probably completed

without the interpolation of the association areas. A schematic figure of these connections illustrates the paper.

A. L. TAYLOR.

PATHOLOGY.

ON THE STATE OF THE PERICELLULAR RETICULUM IN CERTAIN PATHOLOGICAL CONDITIONS OF THE CENTRAL NERVOUS SYSTEM. (Sul Modo di comportarsi del reticolo pericellulare in alcuni processi patologici del tessuto nervoso.)
C. BESTA, *Riv. di Patol. nerv. e ment.*, Vol. xvi., Fasc. 10, p. 604.

THE author has undertaken a series of researches, with the object of determining the alterations that take place in the pericellular reticulum of the nerve cell and in the interstitial diffuse reticulum (fullnetz of Bethe) when the central nervous system is subjected to various pathological conditions. He concludes:

The peripheral reticulum of the nerve cell must be considered to be a true morphological element of the nervous system, the results of various experiments proving conclusively that it is not an artificial product.

The peripheral reticulum behaves very differently to the nervous elements, and appears to be altogether independent of them in cases where a lesion is limited to the nervous elements. Thus, in cases of destruction of the nerve cells and the pericellular arborisations, the reticulum either remains intact or shows changes which appear to be related to the neuroglial proliferation. The reticulum is also unaffected, when the nerve cells show profound disturbances resulting from the action of cold, inanition, or experimental hyperthermia. The peripheral reticulum must be studied in all pathological processes of the central nervous system, and this study has an important bearing on the question of neuronophagia.

F. GOLLA.

ON A CASE OF LESION OF THE LEFT LENTICULAR NUCLEUS.
(646) (Sopra un caso di lesione del nucleo lenticolare di sinistra.)
F. UGOLOTTI, *Riv. di Patol. nerv. e ment.*, Vol. xvi., F. 8, p. 471.

THE case is one where the patient after an apoplectic ictus developed hemiplegia of the right extremities, loss of speech and difficulty in swallowing. Post-mortem a small hæmorrhagic softening was found involving the mesial and posterior region of the putamen. The internal capsule was also slightly affected by the softening. The author, after discussing the case at some length, concludes:

The results obtained from this case, whilst they confirm the

view of Mingazzini that the lenticular nucleus sends fibres to the bulbar nuclei, and more particularly that the posterior portion of the putamen on the left side sends motor fibres to the lower centres for articulate speech, does not offer sufficient evidence as to the course of these fibres. It still remains to be seen whether these fibres have a separate course or, as seems probable to the author, they run mixed up with the common motor cortical bulbar paths.

F. GOLLA.

**CARBOHYDRATE TOLERANCE AND THE POSTERIOR LOBE
(647) OF THE HYPOPHYSIS CEREBRI. AN EXPERIMENTAL
AND CLINICAL STUDY. E. GOETSCH, H. CUSHING, and
C. JACOBSON, *Johns Hopkins Hosp. Bull.*, Vol. xxii., June 1911,
p. 165.**

REMOVAL of the whole of the pituitary, or partial removal of it including damage to the infundibular stalk and its enveloping epithelium, the pars intermedia, or simple crushing of the stalk—each of those conditions causes a temporary glycosuria in dogs. This transient glycosuria is produced by a setting free of posterior lobe secretion. Besides this there is a lowered tolerance for ingested carbohydrates, lasting for several days.

In cases where the operation has caused a permanent insufficiency of posterior lobe secretion, there the assimilation limit, which is at first temporarily diminished, rises, and a lasting and augmented tolerance for sugars is produced; one also notices that there is a generalised adiposity.

This raised tolerance for sugars (glucose and lævulose) can again be lowered by the intravenous injection of an extract from the posterior lobe. If repeated injections are made emaciation follows.

According to the authors the posterior lobe secretion is discharged into the third ventricle, and by means of the cerebro-spinal fluid reaches the blood-stream. Cases of acromegaly or gigantism were examined, and it was found that in the earlier stages the tolerance for carbohydrates was lowered, whereas in the advanced condition it was markedly raised. Cases of hypopituitarism showed also an increased tolerance for sugars. In the latter cases glandular therapy is indicated.

The authors hold that the transient glycosurias which follow fracture of the base of the skull are caused by injury to the posterior lobe or its infundibular attachment.

R. A. KRAUSE.

THE THYREOPARATHYREOID SECRETION AS WRIGHT'S
 (648) **OPSONIN.** C. E. DE M. SAJOUS, *New York Med. Journ.*, Nov.
 11, 1911, p. 961.

THE author considers that it is possible to raise the opsonic power of the blood in health and disease by the administration of thyroid preparations. The serum from thyroidectomised animals, on the other hand, showed in every instance a most evident diminution of opsonic power, while normal serum, if brought in contact with a 1 in 200 solution of thyroid extract, shows a more intense phagocytosis than if a solution of normal saline alone be used. The author accordingly ascribes the main rôle in the production of opsonins to the thyro-parathyroid glands, especially to the parathyroid glands themselves, and thinks that the other protective substances are likewise the products of ductless glands.

A. NINIAN BRUCE.

ON NEUROGLIA KARYORRHEXIS. G. R. LAFORA, *Bulletin*
 (649) No. 3, *Govt. Hosp. for the Insane, Washington, D.C.*, p. 77.

VERY varied appearances are produced by this morbid process. The condition was found by the writer to be well marked in the cornu ammonis of an epileptic, being accompanied by much neuroglial hyperplasia. Subsequently it was found: (1) present in senile and arterio-sclerotic dementia, and round an experimental cortical hæmorrhage in a monkey; (2) scanty in several syphilitic conditions and in the spinal cord of one case of pellagra; (3) absent in three cases of glioma, two of tubercular tumour, three of general paralysis, two of pellagra, one of Korsakow's psychosis, and one of cerebral hæmorrhage. Different views as to the significance of the condition are discussed.

A. L. TAYLOR.

CLINICAL NEUROLOGY.

SENSORY CHANGES IN THE SKIN FOLLOWING THE
 (650) **APPLICATION OF LOCAL ANÆSTHETICS AND**
OTHER AGENTS. I. ETHYL CHLORIDE. S. I. FRANZ and
 W. C. RUEDIGER, *Bulletin No. 3, Govt. Hosp. for the Insane,*
Washington, D.C., p. 15.

THE authors were themselves the subjects of detailed experiments in which the ethyl chloride spray was used as a cutaneous anæsthetic. The results were briefly as follows: (1) The anæsthetic effect is of short duration, while that of analgesia is relatively prolonged. (2) The sensibility of the hairs is affected

in much the same way as the sensibility to touch and to pain. The sensations of lightly brushing them disappears for only a short time, while those for pain and of pressure on traction do not become normal for a much longer period. (3) The differences in the reappearance of the touch-like and pain sensations from the stimulation of the hairs indicate that the hairs have two distinct sensory end-organs for the appreciation of stimuli, and they contradict the assumption that the traction sensations are only exaggerations of the touch-like sensation obtained by lightly brushing the hairs. (4) The variation in temperature sensations is similar to that obtained on section of a nerve and its subsequent regeneration, viz., on the part acted on by ethyl chloride the hot and cold stimuli, when they are first perceived, are appreciated as warm and cool rather than hot and cold. The results of the experiments do not indicate any difference in the nerve supply for these periods of sensations.

A. L. TAYLOR.

ON THE DIAGNOSTIC SIGNIFICANCE OF BABINSKI'S SIGN (651) IN THE PRÆURÆMIC STAGE. (Ueber die diagnostische Bedeutung des Babinskischen Phänomens im präurämischen Zustand.) H. CURSCHMANN, *Munch. med. Woch.*, 1911, lviii., p. 2054.

AFTER alluding to his previous paper on the diagnostic and prognostic significance of tendon reflexes in nephritis (*v. Review*, 1909, vii., p. 783) and to Fette's criticism thereon (*Ibid.*, 1910, viii., p. 246), Curschmann records two cases illustrative of the diagnostic value of Babinski's sign. In the first case, a boy, aged 10 years, bilateral Babinski with unclouded sensorium, diminution of tendon jerks, and loss of abdominal reflex was found sixteen to eighteen hours before uræmic convulsions. In the second case, a girl, aged 19 years, bilateral Babinski preceded an attack of uræmia by sixteen hours, and was decidedly earlier than the exaggeration of the tendon reflexes.

J. D. ROLLESTON.

PRURITUS AND URTICARIAL ROSEOLA IN TABES. (Prurit (652) et roséole urticarienne tabétiques.) MILIAN, *Bull. et mém. Soc. méd. Hôp. de Paris*, 1911, xxxii., p. 203.

A MAN who had tabes for several years developed pruritus of the thorax. Slight scratching caused the appearance of a roseola, and more violent scratching of urticaria. The patient was also the subject of dermatographia.

J. D. ROLLESTON.

**SEVERE NEUROMYASTHENIA IN A NURSING WOMAN WHICH
(653) WAS CURED RAPIDLY BY THE ADMINISTRATION OF
PARAGANGLIN VASSALE.** TARABINI, *Gazzetta degli ospedali*, 1911, No. 35.

A WOMAN, 31 years old, was affected in the third week of the puerperium by acute muscular weakness, which presented all the symptoms of myasthenia gravis. It was found impossible for her to continue to nurse her child. Rest and stimulating treatment were without effect. Paraganglin vassale was administered in doses of fifty minims daily, ten minims every two hours. The effect of the medicine was to produce a rapid disappearance of all symptoms. The patient was able to again nurse her child, and with doses of ten minims a day became in every respect strong and healthy. After leaving the hospital the patient again relapsed, but was promptly relieved by paraganglin in doses of ten minims three times a day. F. GOLLA.

**ON A CASE OF POLYNEURITIS OF PREGNANCY WITH
(654) SYMPTOMS OF HYPOTHYROIDISM.** (Sopra un caso di polineurite gravidica unita a sintomi di ipotiro paratiroidismo.) E. PERRERO, *Riv. di Patol. nerv. e ment.*, Vol. xvi., F. 7, P. 393.

THE case detailed was one of a woman at the fourth month of pregnancy. The principal symptoms discussed are those of pernicious vomiting, attacks of tetany, myxœdema, and symptoms of multiple neuritis, especially marked in the lower extremities. The patient also presented Korsakow's syndrome. F. GOLLA.

POST-DIPHTHERITIC HEMIPLEGIA. (Hémiplégies post-diphthériques.) (655) G. JEANNEAU, *Thèses de Montpellier*, 1910-11, No. 106.

JEANNEAU reviews the literature, and records a personal case in a youth, aged 17, in whom right hemiplegia, preceded by cardiac failure, developed on the tenth day of diphtheria. Contractures of the upper and lower limbs supervened, the facial palsy remaining flaccid. Mental impairment was shown by partial amnesia and inability to appreciate the gravity of his condition.

J. D. ROLLESTON.

**A PECULIAR CONDITION OF THE HAND IN SYRINGOMYELIA ;
(656) "LIZARD-SKIN" HAND.** (Sur un aspect particulier de la main en "peau de lézard.") BOVERI, *Nouv. Icon. d. l. Salpêtr.*, May-June 1911, p. 207.

THE patient was a man aged 40, with characteristic symptoms of syringomyelia. The right hand was of the main-en-griffe type. The

skin of the right hand presented the following peculiarities :—The little squares or irregularly shaped areas bounded by the fine epidermic folds were enlarged in size, their average being at least double that of the corresponding areas on the left hand ; the skin, further, was rather shiny or glossy. The pores of the skin on the right were more widely separated from each other, and seemed to be at the bottom of little pits, due to slight puffiness of the epidermis generally. The epidermic folds were very marked. Thus a certain resemblance to the skin of the lizard or the crocodile was to be observed.

S. A. K. WILSON.

CONGENITAL DEFORMITIES OF THE HANDS, ETC. (Contribution à l'étude des difformités congénitales associées des mains.) FUMAROLA, *Nouv. Icon. d. l. Salpêt.*, July-August 1911, p. 329.

AMONG other curious congenital malformations, the patient, a man of 27, had no thumb whatever on the left hand (ectrodactyly), while the thumb of the right hand was thickened (metacarpal), its terminal phalanx was doubled, and the elements of this doubled phalanx were fused at their base (macroductyly, polyductyly, incomplete syndactyly). There is an interesting though brief discussion of the possible pathogeny of these anomalies.

S. A. K. WILSON.

MULTIPLE CEREBRAL HÆMORRHAGES. (Hémorragie cérébrale récente à foyers multiples.) SOUQUES, *Nouv. Icon. d. l. Salpêt.*, May-June 1911, p. 193.

IN one case twenty-eight fresh hæmorrhages of different dimensions were found in the central nervous system ; in a second case, eleven. Both patients were over sixty, and both suffered from Bright's disease.

S. A. K. WILSON.

MENINGOCOCCUS ENDOCARDITIS WITH SEPTICÆMIA. R. L. (659) CECIL and W. B. SOPER, *Arch. Int. Med.*, 1911, viii., p. 1.

A RECORD of a fatal case in a man, aged 31, in whom the symptoms and pathological anatomy were those of malignant endocarditis of streptococcus or pneumococcus origin. There were no signs of meningitis during life or at the necropsy.

J. D. ROLLESTON.

MENINGEAL SYMPTOMS AT THE ONSET OF SCARLET FEVER.

(660) (*État méninge au début d'une scarlatine.*) A. CAYREL and A. WEILL, *Bull. et mém. Soc. méd. Hôp. de Paris*, 1911, xxxii., p. 225.

ON the third day of scarlet fever, as the rash was beginning to fade, a young soldier developed meningeal symptoms (headache, vomiting, nuchal rigidity, Kernig's sign, and meningeal streak). Lumbar puncture gave issue to 20 c.c. of clear fluid under hypertension, examination of which showed numerous lymphocytes, but no microbes. Rapid recovery ensued. J. D. ROLLESTON.

TYPHOID CEREBRO-SPINAL MENINGITIS. (Méningite cérébro-

(661) *spinale éberthienne.*) A. BERGÉ and R. J. WEISSENBACH, *Bull. et mém. Soc. méd. des Hôp. de Paris*, 1911, xxxii., p. 279.

A RECORD of a case in a woman, aged 22, whose symptoms were those of a cerebro-spinal meningitis pure and simple. The condition was accompanied by herpes of the skin and mucosæ, and not preceded or followed by any signs of typhoid fever. The cerebro-spinal fluid obtained at the first three lumbar punctures, escaped under high pressure, was turbid, and contained organisms which bacteriological tests proved to be typhoid bacilli. Widal's reaction was positive. Cytological examination of the cerebro-spinal fluid showed at first a polynucleosis, and later a lymphocytosis which was still present two months after the onset. The authors suggest that such a patient is liable to develop nervous sequelæ like syphilitic patients with chronic lymphocytosis.

J. D. ROLLESTON.

CHRONIC SYPHILITIC MENINGO-ENCEPHALITIS, WITH CERE-

(662) **BRAL ATROPHY.** CLAUDE and SCHAEFFER, *L'Encéphale*, Aug. 11, 1911, p. 12.

A WOMAN, aged 28, without definite history of syphilis.

Clinically.—Bilateral tremors, of intention type, in all the limbs, specially on the right side; spasticity, especially of the lower extremities, without definite paralysis; tremor and overaction of lips and lower facial muscles, with ataxia of speech; mental impairment, loss of memory, etc.; exaggerated deep reflexes, extensor response on the left side, less constant on the right; pupils equal, Argyll-Robertson sign in the right eye, normal reactions in the left eye; moderate lymphocytosis in the cerebro-spinal fluid.

Pathologically.—Diminution in size of brain as a whole; its weight only 880 grammes; diffuse generalised fibro-plastic meningitis of pia; characteristic miliary gummata of the meninges, which in some places are adherent to the cortex; atrophy of cerebral cortex more or less throughout; typical cortical cellular degenerative changes; perivascular infiltration scarcely seen, and no plasma cells discoverable; granular ependymitis and subjacent neuroglial sclerosis.

The authors discuss whether the case should be considered one of diffuse cerebral syphilis or of general paralysis with the association of gummatous lesions. The former is the correct diagnosis, for both clinical and pathological reasons. S. A. K. WILSON.

A CASE OF HEINE-MEDIN'S DISEASE. (*Un cas de maladie de* (663) *Heine Medin.*) R. LE CLERC, *Bull. et mém. Soc. méd. Hôp. de Paris*, 1911, xxxii., p. 214.

A SPORADIC case in a man, aged 59, who died with bulbar symptoms on the fourth day of disease. J. D. ROLLESTON.

ACUTE POLIOMYELITIS, WITH SPECIAL REFERENCE TO THE (664) **OUTBREAK IN PLYMOUTH, STONEHOUSE, AND DEVON-PORT.** SOLTAU, *Brit. Med. Journ.*, Nov. 4, 1911, p. 1151.

THE author has collected 73 cases in this outbreak, of which 33 were males, 20 females, and 20 uncertain. The oldest was fifty-two, and the average age of 71 cases was six years. Complete recovery took place in 7 (*i.e.* 10 per cent.), while 6 (*i.e.* 8·2 per cent.) proved fatal. The first cases appeared early in July, and a few isolated cases occurred as late as October. In a considerable number of cases here the condition began with a sore throat, and the author is inclined to the view that the virus was spread by dust, and that the infection took place by way of the naso-pharynx. Diarrhoea was rare in this epidemic. The resemblance of the most severe cases to Landry's paralysis is referred to, and the difficulty in discriminating between poliomyelitis and cerebro-spinal meningitis.

A. NINIAN BRUCE.

CLINICAL OBSERVATIONS ON AN EPIDEMIC OF ACUTE (665) **POLIOMYELITIS IN CORNWALL.** GREGOR and HOPPER, *Brit. Med. Journ.*, Nov. 4, 1911, p. 1154.

A DETAILED description of twenty-one cases in this epidemic is here given, of which fourteen were males and seven females. Five

proved fatal (23·8 per cent.), and only one case recovered completely. The ages of the patients ranged from ten months to fifty years. The most outstanding symptom, and one which occurred in every case, was derangement of the intestinal tract—either constipation or diarrhoea, or both. Except in five, three of which had epistaxis and two slightly reddened fauces, there was no affection of the naso-pharyngeal mucous membrane. The author thus thinks that the virus would thus seem to enter the body by the alimentary canal rather than by the air passages. An urticarial rash was present in six cases.

The authors divide their cases into four groups, which only differ in degree from one another, and appear to depend on the virulence of the organism, the resisting power of the patient, and the part of the nervous system attacked. Group 1. Encephaloid type, four cases, all fatal. Group 2. Gradual ascending and descending type, seven cases. Group 3. Sudden type, nine cases. Group 4. Transient type, one case. The interesting observation is also made that a large number of cases of herpes zoster also occurred at the same time.

A. NINIAN BRUCE.

EPIDEMIC ANTERIOR POLIOMYELITIS IN HUNTINGDON-
(666) **SHIRE.** MOSS-BLUNDELL, *Brit. Med. Journ.*, Nov. 4, 1911,
p. 1157.

FIFTEEN cases are here described, of which twelve occurred within an area of about 200 yards square, the remaining three being in an adjacent village a mile away. The period between the date of onset was practically one week in all the cases in one family, with one exception. Constipation was a prominent feature in all the cases except three, and the mothers noticed that in families where one member was attacked, some other member suffered from malaise, accompanied by diarrhoea, which apparently rendered the disease abortive in its initial stages, as the child recovered without any further symptoms. Only one death had occurred. As all the cases, with one exception, occurred in houses off the main street, where the traffic was very light, dust infection was considered unlikely.

A. NINIAN BRUCE.

ACUTE ANTERIOR POLIOMYELITIS AND LANDRY'S PAR-
(667) **ALYSIS.** HACK, *Brit. Med. Journ.*, Nov. 4, 1911, p. 1197.

MENTION is here made of three cases of acute anterior poliomyelitis—two in children below twelve months of age and one in a girl of eighteen, and a case of Landry's paralysis in a man of fifty, which

proved fatal in three weeks, all of which occurred in one practice during this summer, and it is suggested that the two conditions may be closely related.

A. NINIAN BRUCE.

EPIDEMIC POLIOMYELITIS. ELEVENTH NOTE: RELATION (668) OF THE VIRUS TO THE TONSILS, BLOOD, AND CEREBRO-SPINAL FLUID; RACES OF THE VIRUS. SIMON FLEXNER and PAUL F. CLARK, *Journ. Amer. Med. Assoc.*, Nov. 18, 1911.

THE writers have now demonstrated the presence of the virus in the tonsils and pharyngeal mucosa of human beings who succumb to poliomyelitis, as constantly as in monkeys after an intracerebral inoculation. It has been found in the blood of monkeys, at the height of the disease, but only when large quantities are withdrawn. So far, similar experiments with the blood of human subjects have been without result. The cerebro-spinal fluid is devoid of demonstrable virus at the onset of paralysis in human beings and in monkeys. It has been detected in the fluid of monkeys in the incubation stage, but two cases of human beings in the pre-paralytic stage failed to yield any virus.

The writers have succeeded in implanting upon monkeys all the ten strains of human virus with which they have experimented. They find it necessary to inoculate emulsions of the human spinal cord, preferably into both the brain and the peritoneal cavity. In making subsequent transfers emulsions should again be employed until the virus becomes adapted to the monkey, when filtrates may be substituted. The adaptation is accomplished more readily and quickly apparently with some strains than with others. The experimental disease produced in monkeys by human virus is less severe and less fatal than the disease produced by a strain which has become wholly adapted to the monkey.

J. H. HARVEY PIRIE.

SOME FINDINGS IN THE CEREBRO-SPINAL FLUID OF ACUTE (669) ANTERIOR POLIOMYELITIS: EPIDEMIC FORM. W. H. HOUGH and G. R. LAFORA, *Bulletin No. 3, Govt. Hosp. for the Insane, Washington, D.C.*, p. 60.

The fluid was examined in eleven cases. The Alzheimer method was employed in the cytological examination. Conclusions: (1) The fluid is generally clear, with an increase of pressure in the early stages, not generally pronounced, and usually has a slightly increased protein content. (2) More or less pleocytosis in the early stages; many polymorphs, probably on account of a meningeal

reaction due to the penetration of the virus into the central nervous system. (3) The increase of polymorphs disappears a few days after the acute onset, and is replaced by a lymphocytosis with some plasma cells and sometimes a few mast cells. (4) The disappearance of the polymorphs is brought about by the activity of the macrophages, one of which may contain the remains of many of the former. (5) The degenerated polymorphs in the interior of the macrophages show very different degrees of staining reactions, indicating rapid digestion. (6) Capillary hæmorrhages are responsible for the altered erythrocytes, a consequence of the selective preference of the disease for the spinal vessels. (7) "Körnchenzellen," altered lymphocytes, and other mononuclear cells are commonly present until after the fever period. (8) No stained bacteria were observed. (9) The similarity of the histology of the fluid to that of some protozoan diseases is an argument in favour of the protozoan nature of the virus.

A. L. TAYLOR.

A NOTE ON THE CEREBRO-SPINAL FLUID IN ACUTE POLIO-(670) MYELITIS. J. GRAHAM FORBES, *Lancet*, Nov. 18, 1911, p. 1400.

EXAMINATION was made in thirty-three cases at various stages after onset, in view of the idea that certain outbreaks are due to the meningococcus and on account of the difficulty which may occur in distinguishing the meningeal type of poliomyelitis from acute cerebro-spinal meningitis. In most cases the fluid was clear and free from clot, unless traces of blood were present; in one specimen, clear on withdrawal, a fine web of clot formed on standing. A lymphocytosis was generally present to a slight degree, in a few to a considerable degree. Very few polymorphs were ever found. In no case were organisms found in the stained films of the cells. The Widal reaction to *B. typhosus* and *B. enteritidis* in ten cases proved negative.

J. H. HARVEY PIRIE.

THE SPINAL GANGLIA IN TWO CASES OF OLD INFANTILE (671) PARALYSIS. (Recherches cytopathologiques sur les ganglions rachidiens dans deux cas de paralysie spinale infantile de date ancienne.) JONNESCO, *Nouv. Icon. d. l. Salpêtr.*, July-August 1911, p. 273.

A MINUTE study of the histological changes in the posterior root ganglia corresponding to the segments affected in two cases of old poliomyelitis. On transverse section of one of these diseased ganglia it is found that the fibrous capsule of the gland is thickened

and very vascular. Immediately underneath the capsule is a zone of nerve cells destroyed by invasion of cellular elements from their endothelial capsule. In the rest of the peripheral zone the ganglion cells show certain definite alterations in their nuclei, nucleoli, and chromatophil bodies; whereas in the cells that remain in the central zone of the ganglia the cellular and pericellular changes are quite different from those of the peripheral zone. The cells are atrophic and in a state of pigmentary degeneration, their nucleoli are often hypertrophied, as are those of the cells in the latter zone.

S. A. K. WILSON.

A FIRST STUDY OF INHERITANCE OF EPILEPSY. C. B. (672) DAVENPORT and D. F. WEEKS, *Journ. of Nervous and Mental Disease*, 1911, Vol. 38, p. 641.

THIS is a systematic attempt to probe the psychical family history of epileptics, along Mendelian lines. The investigation has been carefully carried out and much valuable information on a difficult subject gleaned thereby. The studies were made from cases in the New Jersey State Village for Epileptics at Skillman, U.S.A. A number of pedigrees are given with tables full of carefully collected facts. The subject is pregnant with interest and is bound to throw light upon the hereditary influences in epilepsy and mental deficiency.

The results obtained from this first study may be thus summarised:

1. Epilepsy and feeble-mindedness show a great similarity of behaviour in heredity, supporting the hypothesis that each is due to the absence of a protoplasmic factor that determines complete nervous development.

2. When both parents are either epileptic or feeble-minded, all their offspring are so likewise.

3. Migraine, chorea, paralysis, and extreme nervousness behave as though due to a *simplex* condition of the protoplasmic factor that conditions complete nervous development; i.e. persons belonging to these classes usually carry some wholly defective germ cells. Such persons may be called "tainted."

4. When such a tainted person is mated to a defective about one-half of the offspring are defective.

5. When a *simplex* normal is mated with a defective about half the offspring are normal, the others defective or neurotic.

6. When both parents are *simplex* in nervous development and tainted about one quarter are defective.

7. Normal parents that have epileptic offspring usually show gross nervous defect in their close relations.

8. There is evidence that in epileptic strains the proportion of

epileptic children in the latest complete generation is double that of the preceding; but there is no evidence that in these epileptic strains the average number of children in a fraternity is greater than those in the population at large. "Provided marriage matings continue as at present, and no additional restraint is imposed, the proportion of epileptics in New Jersey would double every thirty years."

As regards the vexed question that alcoholism is a cause of epilepsy and other defectiveness, the author's statistics are hardly crucial. Their figures show a constant excess beyond expectation of epileptic or feeble-minded offspring from alcoholic parents. They add, however, that some of the alcoholics are also feeble-minded, and as such would increase the average of defective offspring apart from any poisoning effect on the germ cells of alcohol.

WM. ALDREN TURNER.

EPILEPSY FOLLOWING TYPHOID FEVER. (*De l'épilepsie consécutive à la fièvre typhoïde.*) J. CHALIER and JUILHE, *Presse méd.*, 1911, xix., p. 776.

A PREVIOUSLY healthy man, aged 20, with no inherited nervous taint, had a severe attack of typhoid fever, with several relapses, in 1905. In convalescence four typical attacks of epilepsy occurred. There was then no further attack for five months, and then they recurred at irregular intervals, the frequency being reduced by bromides. Examination of the patient in 1909 showed an absence of any stigma of hysteria. The look was dull, and there was some intellectual impairment.

Seven out of 120 cases of epilepsy examined by Dide at Ville-Evrard gave a history of typhoid, but three had a neuropathic heredity, or had had convulsions in infancy. In four, however, there was nothing in the family or personal history except typhoid fever. The writers also refer to Petges' case (*v. Review*, 1910, viii., p. 388).

J. D. ROLLESTON.

CONTRIBUTION TO THE HISTOPATHOLOGY AND PATHO-
(674) **GENESIS OF MYOCLONIC EPILEPSY.** G. L. LAFORA and B. GLUECK, *Bulletin No. 3, Govt. Hosp. for the Insane, Washington, D.C.*, p. 98.

A FULL clinical and pathological report of one case. Summary of conclusions: (1) No gross lesions are produced in myoclonic epilepsy. (2) The histopathological changes are more marked in the first, second, and fourth layers of the cerebral cortex, in the ganglion cells of the thalamus, corpora quadrigemina, medulla, and

in the posterior horns of the cord. (3) The Betz cells and the nerve cells of the posterior horns of the cord showed the slightest changes. (4) Perivascular hæmorrhages and neuroglial hyperplasia were also observed. (5) The most frequent change in the case examined was amyloid degeneration in the protoplasm of the nerve cells mentioned above. (6) The myoclonic attacks appear to depend upon an intoxication, which causes these changes in the sensory cells, and which at the same time gives rise to the nervous discharges.

A. L. TAYLOR.

**ON THE PRESENCE OF AMYLOID BODIES IN THE PROTOPLASM
(675) OF THE GANGLION CELLS: A CONTRIBUTION TO THE
STUDY OF THE AMYLOID SUBSTANCE IN THE NERVOUS
SYSTEM.** G. R. LAFORA, *Bulletin No. 3, 1911, Gort. Hosp. for
the Insane, Washington, D.C., p. 83.*

IN a case of myoclonic epilepsy the author found corpora amylacea for the first time in the interior of the nerve cells (in the brain, pons, medulla, and spinal cord). The current theories regarding the origin of these bodies are not sufficient. We must consider the substance to be a derivative of substances similar to the myelin (lecithin or cholesterin?) and to be produced by certain changes in metabolism. The changes may take place in any element of the nervous tissue. The precipitation of the substance probably takes place round an attraction centre (definite crystals are often observed in the centre of the bodies), by a mechanism similar to the production of calculi. In some nerve cells a necrotic process seems to take place in the protoplasm previous to the formation of the amyloid bodies.

A. L. TAYLOR.

**A CASE OF DURAL ENDOTHELIOMA INVOLVING THE
(676) FRONTAL LOBES.** NICHOLAS DYNAN, *New York Med. Journ.,
Nov. 4, 1911, p. 928.*

THE case described is that of a man aged 72. On admission to hospital he was found to lead a vegetative existence, being confined to bed and untidy in his habits. He was disoriented regarding time, place, and persons. His memory was defective for both recent and remote events. At first rather cheerful and amiable, he later, before death, became very antagonistic to anything that was done for him. Sight, smell, hearing, and probably also taste were lost. Double cataract prevented an ophthalmoscopic examination. Touch and pain sensations were not affected, although a subjective feeling of cold was noted. The muscular

system was fairly well developed, although feeble. There were no tremors, and he was able to walk round the bed, holding it for support. He had no pain and no headache. Babinski reaction was absent. Knee jerks much exaggerated. He became gradually emaciated, his appetite failed, and he died from lung involvement.

At the autopsy a tumour about two inches in diameter was discovered growing from the orbital surface of the frontal bone in the median line, and destroying both olfactory tracts and bulbs, and also the middle third of both gyri recti, and slightly pressing upon the optic chiasma and nerves.

A. NINIAN BRUCE.

TUMOURS OF THE PITUITARY BODY. COURTELLEMONT (Congrès (677) d'Amiens), *L'Encéphale*, Sept. 10, 1911, p. 282.

THIS communication is a brief *revue d'ensemble* of the subject, in which pituitary tumours are classified from a histological and from a clinical standpoint. The symptoms are divisible into mechanical effects and dystrophic states. Acromegaly and gigantism are associated with hyper-, the adiposo-genital syndrome with hypopituitarism.

In the discussion which followed the paper, Sainton spoke on hypophyseal diabetes, and mentioned an interesting case of an alternating polyglandular syndrome.

At the same Congress Ballet and Laignel-Lavastine showed specimens from a case of acromegaly dying at the age of sixty-one; the hypophysis was enlarged and presented a rounded depression on its upper surface; the glandular lobe was sclerosed, with epithelial hyperplasia, while the nervous lobe was rich in cells, containing pigment.

Laignel-Lavastine showed sections from five hypophyses, representing the stages from simple hyperplasia from over-functioning to inflammation, and to adenomatous and cancerous overgrowths.

Rousset and Cluny gave a histological classification of tumours of the anterior lobe.

S. A. K. WILSON.

ACROMEGALOID DEFECTS. (Déformations Acromégaloïdes.) (678) MOSSÉ, *Nouv. Icon. d. l. Salpêtr.*, July-August 1911, p. 313.

A YOUNG man of 20 presented gross enlargement of the extremities, thickening of the bones of the skull, dilatation of the frontal sinuses, and one or two other acromegalic signs; in addition his temperament and mental development were those of a child. Many of the accepted symptoms of acromegaly, gigantism, and

infantilism were not observed, yet, taken as a whole, the case presented certain symptoms referable to each of these conditions. They had, moreover, been noticed at an early period of the patient's life and were therefore probably congenital. The pathogeny of the condition appears very obscure. S. A. K. WILSON.

**REPORT OF TWO CASES OF OCCIPITAL ABSCESS WITH
(679) PUPILLARY PHENOMENON.** STRAUSS, *N.Y. Med. Journ.*,
Aug. 12, 1911, p. 334.

CASE 1.—After an operation for chronic suppurative otitis media of the left side, failure of vision developed. Right homonymous hemianopsia was found, the dividing line passing nearly through the fixation point. Double optic neuritis was present, and Wernicke's hemiopic pupillary reaction was demonstrable.

In spite of Wernicke's sign an abscess was diagnosed and found in the left occipital lobe. Temporary recovery followed opening the abscess, death ultimately resulting.

CASE 2.—One month after a pulmonary abscess headache occurred with left homonymous hemianopsia and Wernicke's hemiopic pupillary reaction. The abscess was not revealed by craniotomy, but found post-mortem.

In neither of these cases can the author explain the presence of Wernicke's sign. In both cases the abscess was far forward, and it is suggested that when Wernicke's sign is found combined with hemiopia and symptoms of abscess, the lesion should be looked for near the junction of the occipital and temporal lobes, and not far back in the occipital lobe.

It is worthy of note that in both cases the hemiopic pupillary reaction was easily demonstrated by an ordinary pocket electric lamp. H. M. TRAQUAIR.

**A CASE OF MIXED ASTIGMATISM PRESENTING SYMPTOMS
(680) OF BRAIN TUMOUR.** BRAV, *N.Y. Med. Journ.*, Aug. 26,
1911, p. 429.

THIS patient, aged 50, had suffered from headaches for three months. Other symptoms were nausea, vomiting, vertigo, loss of memory, depression of spirits, and irritability. There was some loss of co-ordination in the gait, dimness of vision, and diplopia.

There was no optic neuritis, nor paralysis of any ocular muscle. After correction of a fairly high degree of mixed astigmatism, the symptoms abated rapidly. Monocular diplopia remained in the right eye, ascribed by the author to "astigmatic accommodation."

The addition of a +0.25 (?) spherical lens to the glasses for reading purposes made the patient more comfortable.

The author states that this is the second case of the kind in his experience.
H. M. TRAQUAIR.

**A SERIES OF STUDIES OF NERVOUS AFFECTIONS IN
(681) RELATION TO THE ADJUSTMENT OF THE EYES.**

STEVENS, *N.Y. Med. Journ.*, Sept. 2, 1911, p. 467.

THIS paper is the seventh study of the series.

The author draws attention to the relation of the normal plane of vision to the cephalic index and the facial angle. Adding to these considerations the extent of the rotations of the eyes and the declination of the meridians of the cornea, he arrives at a set of factors which influence the pose of the head, which may be erect, or thrown backwards, forwards, or to one side.

Thus habitual positions of the head are brought about, and each of these produces a corresponding carriage of the body, and in its train various morbid conditions, nervous and otherwise.

In this way appendicitis, displacements of the kidneys and uterus, pulmonary tuberculosis, lateral curvature of the spine, and certain spasmodic conditions of the face and neck, are shown, in the author's opinion, to be ultimately dependent, to a great extent at any rate, on ocular conditions.
H. M. TRAQUAIR.

**BRONZED DIABETES (HÆMOCHROMATOSIS). REPORT OF A
(682) CASE AND REVIEW OF THE LITERATURE. G. BLUMER,**

New York Med. Journ., Nov. 4, 1911, p. 922.

A DESCRIPTION of the case of a man, aged 67, who was admitted to hospital with a diagnosis of diabetic coma, dying within forty-eight hours after admission. Typhoid when young, no alcohol, and no syphilis. Present illness of six months' duration. Marked polyuria, loss of appetite, weakness and loss of weight, and air hunger. Strong odour of acetone on the breath on admission. There was patchy brownish pigmentation of the skin of the forehead, while the skin of the hands, forearms, and legs showed a uniform, rather dark, greyish-brown pigmentation.

At the autopsy marked pigmentation was found in the stomach, pancreas, liver, spleen, lymph nodes and heart, the liver and pancreas also being markedly cirrhotic. The suprarenal glands were not examined for adrenalin.

The author points out that the condition is confined almost exclusively to males and is found between the ages of thirty and sixty. The duration of life from the onset of the disease is usually

under one year, the percentage of sugar being large and little influenced by diet, and the fatal ending usually resulting from acid intoxication. The question of the pigmentation, the pathology and differential diagnosis is discussed, and references to the literature are given.

A. NINIAN BRUCE.

SYPHILIS OF THE LABYRINTH IN THE EARLY SECONDARY
(683) **STAGE.** (*Labyrinthsyphilis im Frühstadium der Sekundärperiode.*) K. HINTZE, *Münch. med. Woch.*, 1911, lviii., p. 1185.

A MAN, aged 35, with other symptoms of secondary syphilis, suddenly developed bilateral deafness, vertigo, and tinnitus, and had attacks of vomiting. Rapid recovery followed sublimate injections and iodides internally.

J. D. ROLLESTON.

THE DIFFERENTIAL DIAGNOSIS OF SYPHILIS AND PARA-
(684) **SYPHILIS OF THE NERVOUS SYSTEM.** F. W. MOTT,
Lancet, Nov. 18, 1911, p. 1392.

THIS paper, simply bristling with facts bearing on the differential diagnosis of syphilitic and parasymphilitic nervous diseases from each other and from other nervous diseases, is, from its nature, almost incapable of abstracting, but is well worth referring to for points raised in such a connection.

J. H. HARVEY PIRIE.

THE COMPARATIVE VALUE OF THE VARIOUS METHODS OF
(685) **ANTISYPHILITIC TREATMENT AS ESTIMATED BY**
THE WASSERMANN REACTION. H. W. BAYLY, *Lancet*,
Nov. 11, 1911, p. 1332.

IF rapidity of change of reaction be taken as a test of efficiency of treatment, the writer places salvarsan first, inunction or intramuscular injection of insoluble mercurial compounds second, and mercurial pills and suppositories a bad third. He considers that his results suggest the advisability of combined salvarsan and mercurial treatment.

J. H. HARVEY PIRIE.

THE EMPLOYMENT OF 606 IN AFFECTIONS OF THE NERVOUS
(686) **SYSTEM.** (*L'emploi du 606 dans les affections du système nerveux d'origine syphilitique.*) ANDRE PELISIER, *L'Encéphale*,
July 1911, p. 61.

THIS paper is a record of the results obtained by various observers on the treatment with 606. The author introduces his subject

with the caution, that where there is anatomical degeneration, the action of the remedy is doubtful ; it is unlikely to affect a cure, and it can only be hoped that the drug will act as a preventative and arrest the further progress of the disease.

According to Ehrlich this drug has a direct action on the spirochaetes, therefore in metasyphilitic conditions, where it is extremely rare to find these, the curative action of the drug is very doubtful. Yet the existence of the Wassermann reaction appears to demonstrate the action of the spirochaete pallida in these conditions, and should therefore give some hope for the therapeutic action of the drug.

The use of salvarsan in all the lesions of secondary and tertiary syphilis of the nervous system has, according to the majority of observers, been most satisfactory. Cases of gumma and gummatous meningitis have shown some remarkable cures. Improvement and in some cases cure of all the symptoms due to syphilis have been observed, although there are frequent relapses. As the author remarks, if the lesions are not too old and well-established there is an improvement after injection of 606, and this drug is of greater efficacy than mercury and the iodides. In the greater number of cases repeated doses of the drug are necessary to obtain good results; thus "massive sterilisation" recommended by Ehrlich becomes almost essential in syphilis of the nervous system. Unfortunately certain sequelae and relapses resist further treatment, due to the fact that the spirochaete has become arsenic resistant, and this condition is most common in nervous syphilis, therefore most observers combine salvarsan treatment with that of mercury and iodides.

The treatment of tabes dorsalis with this drug is not so satisfactory ; it is indicated in incipient and early cases. A cure cannot be expected except for the subjective symptoms. It is possible that the disease may be arrested, but it must be remembered that untreated tabes is a disease of remissions. It is useless in advanced cases, and the drug is absolutely contraindicated in bulbar crises. These remarks apply equally to cases of general paralysis. In metasyphilitic conditions the value of the drug is not curative, but the fact that the general condition benefits so greatly is probably due to the action of the arsenic, therefore its use is indicated in all early cases, although useless as a cure, and it is dangerous in advanced cases.

The Wassermann reaction in general syphilis after treatment disappears in the greater percentage of cases. The evidence of this disappearance in metasyphilitic conditions is conflicting, and it is usual not to have complete disappearance, although there may be a modification, a condition which is present also in untreated cases.

Sicard has demonstrated that after intravenous injection 660 has been detected in the spinal fluid. Spietkoff, Millian, and Lévy-Valensi have found a marked diminution in the number of lymphocytes in the spinal fluid after the use of salvarsan, which appears to be due to the drug; in this respect they consider its action superior to mercury, which, according to these authors, does not so act on the spinal fluid. If this diminution of cells is of prognostic value, then it is a still further proof of the greater value of 606 over mercury.

WINIFRED MUIRHEAD.

PSYCHIATRY.

DEMENTIA PRÆCOX AND ATYPICAL ACROMEGALY.

(687) MIKULSKI, *Nouv. Icon. d. l. Salpét.*, July-August 1911, p. 234

A CASE of atypical acromegaly in a man of 39, who also suffered from dementia præcox. The author discusses the question of an acromegalic psychosis.

S. A. K. WILSON.

MEYER'S THEORY OF THE PSYCHOGENIC ORIGIN OF

(688) DEMENTIA PRÆCOX. A CRITICISM. E. STANLEY ABBOT,

Amer. Journ. of Insan., July 1911.

THE author commences by giving a brief résumé of Meyer's theory, particularly pointing out the great stress laid on the "constitutional make-up" of the condition and the indifference displayed to the organic conditions and evidences of toxæmia present in this disease. He criticises very strongly Meyer's neglect of these organic and toxic conditions, which the author holds are not incidental but must be taken into consideration in any inquiry into the origin of this mental state. He next attacks the published record of Meyer's cases, and he considers that they are not sufficiently fully reported to be convincing, or to justify the theory that the reaction in the disease logically follows the constitutional make-up; he instances typical cases of dementia præcox of his own where there was no faulty constitutional make-up and where the condition followed a toxæmia (influenza).

In summing up he criticises Meyer's view as being psycho-biological instead of being broadly biological, and

"That his cases fail to demonstrate :

1. That the antecedents invariably show inefficient habits of adjustment; and
2. That the reaction type shown in the developed psychosis are the necessary developments of the make-up; and they do demonstrate

3. That, when present, the traits do not necessarily determine the reaction-types of the developed psychosis."

The author holds that Meyer, in refusing to consider these organic changes as intimately connected with dementia præcox, turns his back on certain avenues of investigation which may be fruitful; at the same time he admits that diligent search must also be made in the direction Meyer has indicated to get a true conception of this disease.

ALEX. W. NEILL.

GENERAL PARALYSIS IN ALGIERS. (Zur Paralysefrage in (689) Algiers.) E. RÜDIN, *Allg. Ztschr. f. Psychiat.*, 1910, lxxvii., p. 679.

ALTHOUGH 60 to 100 per cent. of the native population is syphilitic, general paralysis is extremely rare in Algiers. During a seven weeks' residence in the district, including a visit to the asylum for Algerian natives at Aix-en-Provence, Rüdin came across only two cases of general paralysis among the natives. In civilised countries, where from 1 to 3 per cent. of all cases of syphilis develop general paralysis, at least 120 cases would have been found in a population of equal size (*cf. Review*, 1910, viii., p. 777.)

J. D. ROLLESTON.

A REPORT UPON THE BACTERIOLOGICAL INVESTIGATION (690) OF THE BLOOD IN FIFTY CASES OF INSANITY.

W. T. SEWELL and COLIN M'DOWALL, *Journ. Ment. Sci.*, Oct. 1911.

THE investigation was an attempt to prove that micro-organisms can be found circulating in the blood of the insane, but the results were so uniformly negative that the authors have had to abandon their thesis. Fifty cases of insanity were investigated, and in only one was a micro-organism found, that being a *Staphylococcus pyogenes aureus*. In this case there was a sloughing wound of the wrist due to a suicidal attempt, so it was evident that the organism was not causal.

W. BOYD.

THE KATATONIC SYMPTOM-COMPLEX: REPORT OF A CASE (691) OCCURRING IN A MIDDLE-AGED MALE. A. C. BUCKLEY,

Amer. Journ. of Insanity. Vol. lxxviii., No. 1, July 1911.

THIS is an account of a case of katatonic stupor which lasted for more than a year, with occasional interruptions of psycho-motor excitement. The rigidity was marked in degree, but with this exception there is nothing worthy of note in the case. The clinical description is preceded by a brief review of the literature of the subject.

W. BOYD.

TREATMENT.

THE RÔLE AND METHODS OF PSYCHOTHERAPY IN THE (692) CARE OF PSYCHASTHENIA WHICH TENDS TOWARDS INEBRIETY; THE FUNCTIONS OF THE GENERAL PRACTITIONER. TOM A. WILLIAMS, *Med. Rec.*, Nov. 4, 1911.

A SENSE of inadequacy is the most frequent cause of the desire for alcohol or other narcotic. It is unscientific to exhort a man not to over-indulge this bent. The proper course is to remove the cause of his tendency.

The sentiment of insufficiency is only one of the chief symptoms of the state termed psychasthenia since the work of Professor Janet. It is a malady which shows itself sometimes in states of intolerable anxiety and distress, sometimes by morbid unreasonable fears, sometimes by insistent ruminations upon the most trifling events, sometimes by impulses to perform absurd actions, always by vacillation of the will, often by mannerisms and erratic gestures, and by the wandering mania or the life of solitude of the recluse.

This is the disease which we have to relieve in order to prevent the greatest part of the inebriety of our day. For the people who suffer from this unfortunate disorder a good hygiene is necessary of course. But even more important for their recovery are psychological measures.

An analysis of their mentality is the first requisite. When this is accomplished (thanks to the means placed at our disposal by modern neurological technique), a re-education must be begun towards the acquisition of tolerance for feelings of inadequacy. After this, mental poise is given by means of a helpful philosophy.

These ends cannot be accomplished by mere precept. The psychotherapist devises *practical exercises in control* by means of gradually increasing periods of mental concentration.

The technique of this is described in the author's paper.

AUTHOR'S ABSTRACT.

BOOKS AND PAMPHLETS RECEIVED.

Bergmann, Dr. Med. Wilhelm. "Selbstbefreiung aus Nervösen Leiden." London: B. Herder, 1911. Pr. 4s.

Cameron, John. "Further Researches on the Rods and Cones of Vertebrate Retinæ" (*Journ. Anat. and Physiol.*, Vol. xlv., 1911, p. 45).

"Cornell University Medical Bulletin," Vol. i., No. 2, Oct. 1911.

Flexner, Simon, and Clark, Paul F. "Epidemic Poliomyelitis, Eleventh Note: Relation of the Virus to Tonsils, Blood and Cerebro-spinal Fluid ;

Races of the Virus." (Lab. of the Rockefeller Institute for Medical Research.)

Fuller, Solomon C. "A Study of the Miliary Plaques found in Brains of the Aged" (*Amer. Journ. of Insan.*, Vol. lxviii., No. 2, Oct. 1911, p. 147).

Ley and Menzerath. *L'Etude Expérimentale de l'Association des Idées dans les Maladies Mentales.* (Rapport de Psychologie, VI^e Congrès belge de Neurologie et de Psychiatrie, Bruges, 1911.)

"Kraepelin's Reckoning Test as used in the Crichton Royal Institution, Dumfries." Edinburgh, John F. Mackenzie; and London, Simpkin, Marshall & Co.

Maloney, William J. "Key to Reckoning Test." Edinburgh, John F. Mackenzie; and London, Simpkin, Marshall & Co.

Petrén, Karl. "Sur les Voies de Conduction de la Sensibilité dans la Moelle Epinière" (*Rev. Neurol.*, No. 9, Mai 15, 1911).

Petrén, Karl. "Über die Grundlinien unserer gegenwärtigen Behandlung der inneren Krankheiten im Lichte der geschichtlichen Entwicklung betrachtet" (*Samml. Klin. Vorträge, Inn. Med.*, No. 204, 1911, S. 193). Pr. M. 0.75.

Petrén, K., and Thorling, I. "Untersuchungen über das Vorkommen von 'Vagotonus und Sympathikotonus'" (*Ztschr. f. klin. Med.*, Bd. 73, H. 1 and 2, 1911).

Rosanoff, A. J., and Orr, Florence, I. "A Study of Heredity in Insanity in the Light of the Mendelian Theory" (*Amer. Journ. of Insan.*, Vol. lxviii., No. 2, Oct. 1911, p. 221).

Sinclair, Eric. "Inspector-General of the Insane, Report for the Year 1910." New South Wales, 1911.

Sommer, Robert. "Klinik für psychische und nervöse Krankheiten," Bd. vi., H. 3, 1911. Halle a S.: Carl Marhold, 1911. M. 12 pro Bd.

Vogt, Prof. Dr H., and Bing, Doz. Dr R. "Ergebnisse der Neurologie und Psychiatrie," Bd. i., H. 1 and 2, 1911. Jena: Gustav Fischer, 1911. M. 20.

Bibliography

ANATOMY

O'TTO MAY and SIR VICTOR HORSLEY. The Mesencephalic Root of the Fifth Nerve. *Brain*, Part 103, Vol. 33, 1910, p. 175.

LEONARD J. KIDD. The Mesencephalic Fifth Root—an Addendum. *Rev. Neurol. and Psychiat.*, Dec. 1910, p. 749.

HALLER. Die Mantelgebiete des Grosshirns von den Nagern aufsteigend bis zum Menschen. *Arch. f. mikros. Anat.*, Bd. 76, H. 2, 1910, S. 305.

NENNLOFF. Ueber die Beziehung des sog. "Zellen des Schwannschen Scheide" zum Myelin in den Nervenfasern von Säugetieren. *Arch. f. mikros. Anat.*, Bd. 76, H. 2, 1910, S. 329.

KARPLUS. Gehirn und Sympathicus. II. Mitteilung. Ein Sympathicuszentrum im Zwischenhirn. *Pflüger's Arch.*, Bd. 135, H. 9-10, 1910, S. 401.

RÖNNE. Ueber den Faserverlauf im Chiasma, beleuchtet durch einige Gesichtsfelduntersuchungen. *Klin. Monatsbl. f. Augenheilk.*, Okt. 1910, S. 455.

BOUCHON. Artère méningée moyenne. *Arch. de Doyen*, Vol. 1, No. 1, 1910, p. 5.

ARIENS KAPPERS. The Migrations of the Motor Cells of the Bulbar Trigemini, Abducens and Facialis in the Series of Vertebrates, and the Differences in the Course of their Root-Fibres. Amsterdam: Johannes Müller, Nov. 1910.

SUTHERLAND SIMPSON and HAYES. The Cardio-Inhibitory Nerve Fibres in the Woodchuck. *Proc. Soc. for Experiment. Biol.*, Vol. 8, No. 1, 1910.

LOYEZ. Coloration des fibres nerveuses par la méthode à l'hématoxyline au fer après inclusion à la celloïdine. *Compt. rend. de la Soc. de Biol.*, No. 35, 1910, p. 311.

PHYSIOLOGY

ANDRÉ-THOMAS. La Fonction Cérébelleuse. Paris: Doin et fils, 1910. 5 fr.

MONAKOW. Über Lokalisation der Hirnfunktionen. Wiesbaden: Bergmann, 1910. M. 1.60.

W. T. PORTER. The Relation of Afferent Impulses to the Vasomotor Centres. *Amer. Journ. Physiol.*, Dec. 1, 1910, p. 276.

STREERATH. Die Wirksamkeit der Wärmesentren im Gehirne. *Arch. f. Anat. u. Physiol.*, H. 3-4, 1910, S. 295.

SMELNIKOW. Ueber die Wirkungsweise des Wärmesentrum im Gehirne. *Arch. f. Anat. u. Physiol.*, H. 3-4, 1910, S. 279.

SCHEIER. Zur Physiologie des Schluckakts. *Beit. zur. Anat., etc., des Ohres, etc.*, Bd. 4, H. 1-2, 1910, S. 115.

KRONECKER. Prove sperimentali della dottrina di coordinazione neurogena del polso cardiaco. *Arch. di Fisiol.*, Vol. 8, f. 5, 1910, p. 463.

CLYDE BROOKS. The Effect of Lesions of the Dorsal Nerve Roots on the Reflex Excitability of the Spinal Cord. *Amer. Journ. Physiol.*, Dec. 1, 1910, p. 212.

MARINESCO. Rapports des cellules de Betz avec les mouvements volontaires. *Nouv. Icon. de la Salpêtrière*, No. 4, 1910, p. 369.

MARTIN RAMSTRÖM. Emanuel Swedenborg's Investigations in Natural Science and the Basis for his Statements concerning the Functions of the Brain. *Till Kungl. Vetenskaps Societeten i Uppsala*, 1910.

LÉOPOLD-LÉVI et HENRI DE ROTHSCILD. Nouvelles Études sur la Physio-Pathologie du Corps Thyroïde. Deuxième série. Paris: Doin et fils, 1910. 12 fr.

PSYCHOLOGY

NICATI. La Psychologie naturelle. Histoire naturelle de la Pensée. Paris: Schleicher Frères, 1910. 1 fr. 95.

W. W. RICHARDSON. The Case of Robert Bachman: A Study in the Psychology of Religion. *Journ. Nerv. and Ment. Dis.*, Nov. 1910, p. 689.

SELLHEIM. Einiges über die Verwertung von Psychologie in der Frauenheilkunde. *Med. Klinik*, Nr. 50, 1910, S. 1965.

KÖHLER. Akustische Untersuchungen II. *Ztschr. f. Psychol.*, Abt. 1, Bd. 58, H. 1-2, 1910, S. 59.

KOSTYLEFF. La Crise de la psychologie expérimentale. Paris: F. Alcan, 1911. 2 fr. 50.

LAIGNEL-LAVASTINE. Semiologie du rêve. *Gaz. des Hôp.*, No. 138, 1910, p. 1881.

BUCHNER. Die Gemütskraft und ihr Einfluss auf gesunde und kranke Menschen. Lorch: K. Rohm, 1910. M. —10.

GELB. Theoretisches über "Gestaltqualitäten." *Ztschr. f. Psychol.*, Abt. 1, Bd. 58, H. 1-2, 1910, S. 1.

RANSCHBURG. Die Ergebnisse der experimentellen Psychopathologie des Gedächtnisses. Leipzig: Barth, 1910. M. 3.

ALBERINI. La pedagogia de William James. *Arch. de Psiquiat. y Criminol.*, sept. y oct. 1910, p. 572.

F. DE VEYGA. Psicología de los "Lunfardos." *Arch. de Psiquiat. y Criminol.*, sept. y oct. 1910, p. 513.

PATHOLOGY

ORR and ROWS. The Histological Evidence that Toxins reach the Spinal Cord via the Spinal Roots: with Special Reference to Plasma Cells. *Rec. Neurol. and Psychiat.*, Dec. 1910, p. 721.

VOLLAND. Ueber regionäre Excessivbildung von Ganglien- und Gliazellen. *Ztschr. f. Erforsch. des jugend. Schwachsinn*, Bd. 4, H. 3-4, 1910, S. 237.

WEISENBURG and INGHAM. Multiple Sclerosis with Primary Degeneration of the Motor Columns and Hypoplasia, principally of the Brain Stem. *Journ. Nerv. and Ment. Dis.*, Nov. 1910, p. 675.

RACHFORD. Clinical Significance of Lack of Development of the Pyramidal Tracts in Early Infancy. *Arch. of Pediat.*, Nov. 1910, p. 849.

AOYAMA. Ein Fall von neurotischer Muskelatrophie mit bulbären Veränderungen. *D. Ztschr. f. Nervenheilk.*, Bd. 40, H. 3-4, 1910, S. 207.

F. W. MOIT. The Comparative Neuropathology of Trypanosome and Spirochaete Infections, with a Résumé of our Knowledge of Human Trypanosomiasis (Pathol. Section.) *Proc. Roy. Soc. of Med.*, Nov. 1910, p. 1.

MATTIOLI. Effetti dell' azione combinata del digiuno e del freddo sul reticolo neurofibrillare della cellula nervosa. *Riv. di Patol. nerv. e ment.*, Nov. 1910, p. 649.

PAPADIA. Le pseudoplasmacellule in alcune leucocitosi ed encefaliti sperimentali, con osservazioni sulla morfologia delle plasmacellule. *Riv. di Patol. nerv. e ment.*, Nov. 1910, p. 670.

- MARTINOTTI. Ueber das Verhalten der Plasmazellen und der Gefäße in den Lymphdrüsen nach Durchschneidung der Nerven. *Virchow's Arch.*, Bd. 202, H. 3, 1910, S. 321.
- BIKELES. Zur Kenntnis der retrograden Veränderungen nach Durchschneidung vorderer (event. auch hinterer) Wurzeln. *D. Ztschr. f. Nervenheilk.*, Bd. 40, H. 3-4, 1910, S. 181.
- BEVACQUA. Histologische und bakteriologische Untersuchungen über einen Fall von Paralysis ascendens acutissima. *Centralbl. f. Bakt., etc.*, Bd. 56, H. 5-6, S. 470.
- SANTENOISE et LAIGNEL-LAVASTINE. Autopsie d'un cas de paramyoclonus multiplex associé à l'épilepsie. (Soc. de Psychiat.) *L'Encéphale*, déc. 10, 1910, p. 468.
- CATÒLA. Quelques recherches sur le système nerveux central d'enfants issus de parents en état morbide. *Rev. de méd.*, nov. 10, 1910, p. 871.
- ASCHENHEIM. Ueber den Aschegehalt in den Gehirnen Spasmophiler. *Monatsschr. f. Kinderheilk.*, Nr. 7, 1910, S. 366.
- TOYOTANE WADA. Beiträge zur pathologischen Anatomie einiger Psychosen. (Dementia praecox, senile Psychosen, Amentiaformen.) *Arch. a. d. Neurol. Institut*, Bd. 18, H. 3, 1910, S. 313.
- LAIGNEL-LAVASTINE et PITULESCU. Lésions neuro-fibrillaires des cellules nerveuses corticales des paralytiques généraux. *L'Encéphale*, dec. 10, 1910, p. 417.

CLINICAL NEUROLOGY

GENERAL—

- BREGMAN. Diagnostik der Nervenkrankheiten. Berlin: Karger, 1910. M. 13.60.
- G. R. JEFFREY. On the Cause of Neuropathic States. *Brit. Med. Journ.*, Nov. 19, 1910, p. 1580.
- HENNES. Die Kinematographie im Dienste der Neurologie und Psychiatrie, nebst Beschreibung einiger selteneren Bewegungsstörungen. *Med. Klinik*, Nr. 51, 1910, S. 2010.
- WITTHAUER. Beziehungen zwischen Nerven- und Unterleibskrankheiten. Chemnitz: O. Wenck, 1911. M. —30.
- BERNARD HOLLANDER. Die Wechseljahre des Mannes (Climacterium virile). *Neurol. Centralbl.*, Dez. 1, 1910, S. 1282.

MUSCLES—

- GARTEN. Ueber die zeitliche Folge der Aktionsströme im menschlichen Muskel bei willkürlicher Innervation und bei Erregung des Nerven durch den konstanten Strom. *Ztschr. f. Biol.*, Bd. 55, H. 1-2 und 3-4-5, 1910, Sn. 29, 236.
- MÜLLER. Der musculäre Kopfschmerz, sein Wesen und seine Behandlung. *D. Ztschr. f. Nervenheilk.*, Bd. 40, H. 3-4, 1910, S. 235.

NERVES—

- WIERZEJEWSKI. Ueber einen Fall isolierter Lähmung des Nervus peronaeus nach Unterschenkelosteotomie. *Med. Klinik*, Nr. 49, 1910, S. 1936.
- MURPHY. Brachial Neuritis. *Austral. Med. Journ.*, Oct. 20, 1910, p. 582.
- KÖSTER. Gibt es eine ascendierende Neuritis? *Fortschr. der Med.*, Nr. 48, 1910, S. 1505.
- BOURGUIGNON. Étiologie d'un cas de Polynévrite d'origine intestinale. (Soc. de neurol.) *Rev. Neurol.*, nov. 30, 1910, p. 544.
- FRIEDLANDER. Report of a Case of Multiple Neurofibromata, with a Review of the Subject, based on 262 Cases reported in the Literature. *Journ. Cutan. Dis.*, Oct. 1910, p. 497.
- TANAKA. Zur Frage über die Ursache der Beri-beri-Krankheit. *Wien. med. Wchnschr.*, Nr. 47, 1910, S. 2804.

TANAKA. Ein Beitrag zur Kenntnis der Entstehungsweise der Herzhypertrophie bei der Beri-beri-Krankheit. *Wien. klin. Wchnschr.*, Nr. 48, 1910, S. 1710.

MUTO. Contributo allo studio del morbo di Recklinghausen. *Riv. di Patol. nerv. e ment.*, Nov. 1910, p. 657.

CHARPENTIER. Maladie de Recklinghausen et psychose périodique. *L'Encéphale*, déc. 10, 1910, p. 460.

CLAUDE et VELTER. Polyradiculite de nature vraisemblablement spécifique, simulant un Tabes. (Soc. de neurol.) *Rev. Neurol.*, nov. 10, 1910, p. 525.

SPINAL CORD—

ALFRED BERNSTEIN. Intra-medullary Lesions (? Gumma) of the Spinal Cord with Brown-Séquard Phenomenon and Recovery. *Lancet*, Dec. 3, 1910, p. 1612.

Tabes Dorsalis.—BEAUSSART. Tabétiques et paralytiques généraux conjugaux et familiaux. *Journ. de Neurol.*, nov. 5, 1910, p. 341.

HEULLY. Phénomènes tabétiques et kystes hydatiques paravertébraux. *L'Encéphale*, nov. 10, 1910, p. 367.

BARRE. Arthropathie à type Tabétique du genou, datant de 15 ans. Tabes incipiens récent. (Soc. de neurol.) *Rev. Neurol.*, nov. 30, 1910, p. 529.

SALVADORI. Des arthropathies tabétiques de la colonne vertébrale. *Nouv. Icon. de la Salpêtrière*, No. 4, 1910, p. 416.

RHEIN. Meningitis and Disease of the Radicular Nerves in Tabes Dorsalis. *Journ. Med. Research*, Nov. 1910, p. 451.

WALZER. Ueber Tabesbehandlung. *Med. Klinik*, Nr. 50, 1910, S. 1977.

REDLICH. Über die Quecksilberbehandlung des Tabes dorsalis. *Wien. med. Wchnschr.*, Nr. 51, 1910, S. 3042.

Poliomyelitis Anterior Acuta.—CASSIRER. Neuere Erfahrungen über die akute spinale Kinderlähmung. *Berl. klin. Wchnschr.*, Nr. 50, 1910, S. 2295.

TOM A. WILLIAMS. A Discussion of New Facts concerning Poliomyelitis; its Etiology, Early Diagnosis, and Treatment. *Med. Press*, Dec. 14, 1910, p. 622.

SKOOG. Treatment of Acute Anterior Poliomyelitis. *Journ. Amer. Med. Assoc.*, Nov. 19, 1910, p. 1804.

LANGE. The Orthopedic Treatment of Spinal Paralysis. *Arch. of Pediat.*, Nov. 1910, p. 837.

HILDEBRANDT. Die Verpflanzung des Musculus biceps femoris zur Hebung pathologischer Aussenrotation des Oberschenkels bei spinaler Kinderlähmung. *Therap. Monatsh.*, Nov. 1910, S. 606.

Myelitis.—CHARLTON BASTIAN. Observations on Thrombotic Softening of the Spinal Cord as a Cause of So-called "Acute Myelitis." *Lancet*, Nov. 26, 1910, p. 1531.

LHERMITTE et KLARFELD. La myélite segmentaire d'origine tuberculeuse. *L'Encéphale*, nov. 10, 1910, p. 321.

Landry's Paralysis.—WADSACK. Ein Fall von Landry'scher Paralyse. *Med. Klinik*, Nr. 49 und 50, 1910, Sn. 1933, 1979.

Progressive Muscular Atrophy.—BAUDOUIN et BOURGUIGNON. Un cas d'Atrophie musculaire progressive chez un Syphilitique. (Soc. de neurol.) *Rev. Neurol.*, nov. 30, 1910, p. 536.

Tuberose Sclerosis.—HORNOWSKI et RUDSKI. Sur la sclérose tubéreuse cérébrale. *L'Encéphale*, déc. 10, 1910, p. 435.

Friedreich's Disease.—WUTSCHER. Zur Kasuistik der Friedreich'schen Ataxie und der Hérédo-ataxie cérébelleuse Marie. *Med. Klinik*, Nr. 49, 1910, S. 1932.

Spinal Tumour.—FLATAU. Tumeurs de la moelle épinière et de la colonne vertébrale (suite). *Nouv. Icon. de la Salpêtrière*, No. 4, 1910, p. 456.

INGLIS, KLINGMAN and BALLIN. Extra-medullary Spinal Cord Glioma. *N. Y. Med. Journ.*, Nov. 19, 1910, p. 1006.

SCHWARZ. Zur Diagnose und Therapie der extra-medullären Rückenmarkstumoren. *St. Peters. med. Wchnschr.*, No. 46, 1910, S. 648.

AUERBACH. Ein extradurales Chorionepitheliom im Niveau des mittleren Dorsalmarkes. *Neurol. Centralbl.*, Dez. 16, 1910, S. 1346.

Compression of Cord.—ASCENZI. Compression médullaire par le mal de Pott. Étude clinique et anatomo-pathologique. *L'Encéphale*, nov. 10, 1910, p. 336.

HENRI CLAUDE. Compression médullaire et hystérie. Paraplegie à réchutes. *L'Encéphale*, nov. 10, 1910, p. 359.

Cerebro-spinal Fluid.—NETTER et GENDRON. Modifications dans la composition du liquide céphalo-rachidien à la suite des injections de sérum humain. *Compt. rendu de la Soc. de Biol.*, No. 33, 1910, p. 409.

BRAIN—

WALLENBERG und MARBURG. Neuere Fortschritte in der topischen Diagnostik des Pons und der Oblongata. *D. med. Wchnschr.*, Nr. 48, 1910, S. 2229.

Meningitis.—POULIOT. Les méningites chez la femme enceinte. *Arch. gén. de Méd.*, nov. 1910, p. 641.

W. B. WARRINGTON. Note on Tuberculous Meningitis, with Especial Reference to the Invasion Symptoms when the Disease Occurs in Adults. *Lancet*, Dec. 17, 1910, p. 1754.

SICARD. Méningite sérique et anaphylaxie après sérothérapie rachidienne. *Presse méd.*, No. 95, 1910, p. 891.

LADD. Cerebro-spinal Meningitis. *Cleveland Med. Journ.*, Nov. 1910, p. 868.

COHEN et FITZGERALD. A propos de la méningite cérébro-spinale septicémique. *Centralbl. f. Bakt., etc.*, Bd. 56, H. 5-6, S. 464.

WILLIAMS and FOWLER. Sporadic Cerebro-spinal Meningitis. *Austral. Med. Journ.*, Oct. 20, 1910, p. 569.

PATON. Epidemic Cerebro-spinal Meningitis. *Austral. Med. Journ.*, Oct. 20, 1910, p. 577.

ZEIDLER. Ein Fall von epidemischer Cerebro-spinalmeningitis. *Festnummer der St. Peters. Med. Wchnschr.*, No. 45, 1910, S. 612.

MONZIOLS et LOISELEUR. Méningite cérébro-spinale et abcès cérébral à méningocoques. *Gaz. des hôp.*, No. 134, 1910, p. 1828.

Paraplegia.—WILTON LOVE. A Case of Paraplegia. *Austral. Med. Gaz.*, Oct. 20, 1910, p. 536.

Syphilis.—KREWER. Zur Diagnostik der Hirnlues. *Festnummer der St. Peters. med. Wchnschr.*, No. 45, 1910, S. 616.

BACCELLI. Sul valore di alcuni metodi di precipitazione nella siero-diagnosi della sifilide e delle affezioni metasifilitiche in confronto con la prova di Wassermann. *Riv. ital. di Neuropatol.*, nov. 1910, p. 481.

Arteriosclerosis.—TOYOTANE WADA. Zur Frage der Arteriosklerose der grossen Hirngefässe. *Arch. a. d. Neurol. Institut.*, Bd. 18, H. 3, 1910, S. 361.

Abscess.—NUERNBERG. Ueber Restsymptome nach Ausheilung von operierten Schläfenlappenabszess. *Arch. f. Ohrenheilk.*, Bd. 83, H. 1-2, 1910, S. 162.

NUERNBERG. Otogener Schläfenlappenabszess mit gekreuzter Hörstörung. *Arch. f. Ohrenheilk.*, Bd. 83, H. 1-2, 1910, S. 141.

Tumours.—RISIEN RUSSELL. An Address on Some Points in the Diagnosis and Localization of Intracranial Tumours. *Brit. Med. Journ.*, Dec. 17, 1910, p. 1902.

HOPPE. The Topographic Diagnosis of Subtentorial Brain Tumours. *Journ. Amer. Med. Assoc.*, Dec. 3, 1910, p. 1966.

GRINKER. Three Cases of Tumour in the Cerebello-Pontile Angle. *Journ. Amer. Med. Assoc.*, Dec. 3, 1910, p. 1961.

LANGDON and KRAMER. Brain Tumour of Psychomotor Area causing Jacksonian and Generalised Convulsions, Visual Hallucinations, Somatic Delusions; Operation; Recovery. *Journ. Amer. Med. Assoc.*, Dec. 3, 1910, p. 1960.

WEISENBURG. Exophthalmos in Brain Tumours, with Report of Eight Cases. *Journ. Amer. Med. Assoc.*, Dec. 3, 1910, p. 1957.

R. T. WILLIAMSON. Tumours in the Region of the Corpora Quadrigemina. *Med. Press*, Nov. 30, 1910, p. 561.

HENSCHEN. Ueber Geschwülste der hinteren Schädelgrube, insbesondere des Kleinhirnbrückenwinkels. Jena: Fischer, 1910. M. 9.

BAUDOUIN et SCHAEFFER. Action favorable du Traitement Syphilitique sur un Gliome Cérébral. (Soc. de neurol.) *Rev. Neurol.*, nov. 30, 1910, p. 542.

WEISENBURG. Tumours of the Third Ventricle, with the Establishment of a Symptom-Complex. *Brain*, Part 103, Vol. 33, 1910, p. 236.

HARVEY CUSHING. Strangulation of the Nervi Abducentes by Lateral Branches of the Basilar Artery in Cases of Brain Tumour. *Brain*, Part 103, Vol. 33, 1910, p. 204.

SIR VICTOR HORSLEY. An Address on Surgical *versus* Expectant Treatment of Intra-cranial Tumour. *Brit. Med. Journ.*, Dec. 10, 1910, p. 1833.

Disorders of Speech.—SOUQUES. Aphasie avec Hémiplegie gauche chez un Droitier. (Soc. de neurol.) *Rev. Neurol.*, nov. 30, 1910, p. 547.

SANTONOISE, LAIGNEL-LAVASTINE et BOIDART. Un cas d'aphasie de Wernicke avec autopsie. (Soc. de Psychiat.) *L'Encéphale*, déc. 10, 1910, p. 471.

HEILIGTAG. Ein Fall von traumatischer Alexie. *D. med. Wchnschr.*, Nr. 46, 1910, S. 2147.

MAILLARD et HÉBARD. Un cas de surdit  verbale pure. (Soc. de Psychiat.) *L'Encéphale*, d c. 10, 1910, p. 501.

Cerebellum.—S DERBERGER. Faut-il attribuer   une perturbation des fonctions c r belleuses certains troubles moteurs du myx d me? *Rev. Neurol.*, nov. 30, 1910, p. 487.

CASSIRER und SCHMIEDEN. Ueber eine durch Operation geheilte Zyste des Kleinhirns. *M nch. med. Wchnschr.*, No. 47, 1910, S. 2470.

Pituitary Body.—FISCHER. Hypophysis, Akromegalie und Fettsucht. Wiesbaden: Bergmann, 1910. M. 6.60.

HIRSCH. Ueber Methoden der operativen Behandlung von Hypophysistumoren auf endonasalem Wege. *Arch. f. Laryngol.*, Bd. 24, H. 1, 1910, S. 129.

Skull.—POND. Fractures of the Skull. *Med. Rec.*, Dec. 10, 1910, p. 1049.

BERTOLOTI. Le syndrome radiologique de l'oxyc phalie et des  tats similaires d'hypertension c r brale. Contribution   la pathologie osseuse du cr ne. *Presse m d.*, No. 101, 1910, p. 946.

FITZWILLIAMS. Hereditary Cranio-Cleido-Dysostosis, with Review of all the Published Cases of this Disease. *Lancet*, Nov. 19, 1910, p. 1466.

LA MANNA. Considerazioni antropologiche sui tubercoli retro-condiloidei dell' osso occipitale. *Ann. di Neurol.*, Anno 28, F. 3-4, 1910, p. 189.

GENERAL AND FUNCTIONAL DISEASES—

Epilepsy.—DELBET. Epilepsie Symptomatique. *Journ. des Prat.*, No. 47, 1910, p. 759.

SICARD. Traitement de l' pilepsie essentielle (cure bromo-thyro dienne). *Journ. de M d.*, No. 47, 1910, p. 789.

M NDEZ. Patogenia y tratamiento de la Epilepsia. *Arch. de Psiquiat. y Criminol.*, sept. y oct. 1910, p. 530.

LEVIN. What is the Direct Cause of the Seizures of Epilepsy? *N.Y. Med. Journ.*, Nov. 19, 1910, p. 1023.

- LÜDERS. Zur Lehre von den epileptischen Verwirrtheitszuständen. Berlin: Trenkel, 1910. M. 2.
- GASPAR. Letargia epileptica. *Arch. de Psiquiat. y Criminol.*, sept. y oct. 1910, p. 595.
- TAFT. Report of a Study of Brown-Séquard's Epilepsy in the Guinea-Pig. *Boston Med. and Surg. Journ.*, Dec. 8, 1910, p. 868.
- VIRES. Traitement des épilepsies symptomatiques. (Cong. Fran. de Méd.) *L'Encéphale*, nov. 10, 1910, p. 377.
- SOUQUES. Traitement des épilepsies symptomatiques par la trépanation crânienne. (Cong. Fran. de Méd.) *L'Encéphale*, nov. 10, 1910, p. 375.
- SICARD. Inutilité ou danger des trépanations successives au cours de l'épilepsie traumatique. *Rev. de Psychiat.*, oct. 1910, p. 420.
- Chorea.**—MACHT. Sabromin bei Chorea. *D. med. Wchnschr.*, Nr. 49, 1910, S. 2296.
- Hysteria.**—FAIRBANKS. A Case of Hysteria in a Boy. *Pediatrics*, Nov. 1910, p. 756.
- PIERRE JANET. L'État mental des Hystériques. Deuxième édition. Paris: Alcan, 1910. 15s.
- TOM A. WILLIAMS. Note on a Case of Hysterical Dyspraxia. *Lancet*, Nov. 26, 1910, p. 1548.
- Neurasthenia.**—W. B. WARRINGTON. Neurasthenia. *Med. Chron.*, Dec. 1910, p. 143.
- RAYMOND. Neurasthénie. *Journ. des Prat.*, No. 48, 1910, p. 774.
- CLAUDE. Neurasthénie et aérophagie. *Journ. des Prat.*, No. 48, 1910, p. 773.
- FRIBERGER. Über die Prognose der Studienneurasthenie. *D. Ztschr. f. Nervenhilf.*, Bd. 40, H. 3-4, 1910, S. 291.
- GENTILE. Studio clinico-statistico sulle neuropatie e psicopatie sifilitiche. Considerazioni sulla neurastenia sifilitica. *Riv. ital. di Neuropatol.*, nov. 1910, p. 491.
- REYNOLDS. Etiology of Ptozes and their Relation to Neurasthenia. *Journ. Amer. Med. Assoc.*, Dec. 3, 1910, p. 1943.
- Migraine.**—BLESSIG und AMBURGER. Ein Fall von schwerer Flimmermigräne mit retinalen Angiospasmen. *Festnummer der St. Peters. med. Wchnschr.*, Nr. 45, 1910, S. 622.
- WILLIAM RUSSELL. A Post-Graduate Clinic on Recurring Arterial Hypertonus in Granular Kidney and in Migraine. *Lancet*, Dec. 3, 1910, p. 1602.
- Neuroses.**—HITSCHMANN. Freud's Neurosenlehre. Nach ihrem gegenwärt. Stande zusammenfassend dargestellt. Wien: Deuticke, 1911, M. 4.
- VULLIET. Les indications opératoires en pathologie gastrique et les pseudo-névroses stomacales. Paris: Charpentier, 1910.
- Neuralgia.**—WETTERWALD. Topographie des névralgies. Essai pour la recherche et le traitement des points douloureux cutanés. Paris: Maloine, 1910, 1 fr. 50 c.
- GARRÉ. Zur Aetiologie des rezidivierenden Gelenkhydrops bei Gelenkneuralgie. *Münch. med. Wchnschr.*, No. 47, 1910, S. 2451.
- COURTOIS-SUFFIT et FR. BOURGEOIS. Deux cas de coccygodinie d'origin traumatique. *Gaz. des hôp.*, No. 142, 1910, p. 1945.
- BOLTEN. Ueber die Mortonsche Form der Metatarsalgie. *Mitt. a. d. Grenzgeb. des Med. u. Chir.*, Bd. 22, H. 2, S. 211.
- KILIANI. A Further Report on the Treatment of Facial Neuralgia by Alcohol Injections. *Med. Rec.*, Dec. 10, 1910, p. 1044.
- Torticollis.**—SICARD et BLOCH. A propos du traitement du torticollis mental de Brissaud. Injections locales de scopolamine. (Soc. de neurol.) *Rev. Neurol.*, nov. 30, 1910, p. 528.

WEINSTEIN. On Torticollis after the Removal of Adenoids of the Nasopharynx. *Pediatrics*, Nov. 1910, p. 762.

Paralysis Agitans.—GOLDSTEIN et COBILOVICI. Un cas de paralysie agitante chez une ancienne basedowienne. *Rev. Neurol.*, nov. 15, 1910, p. 444.

Exophthalmic Goitre.—SICARD. A propos du traitement du goitre exophthalmique. *Journ. de Méd.*, No. 51, 1910, p. 857.

HALE WHITE. The Purvis Oration on the Treatment and Prognosis of Exophthalmic Goitre. *Lancet*, Dec. 3, 1910, p. 1599.

CLAUDE. Les états basedowiens. *Journ. des Prat.*, No. 50, 1910, p. 807.

Tetany.—SCHOENBORN. Klinisches zur menschlichen Tetanie im Anschluss an 41 Fälle. *D. Ztschr. f. Nervenheilk.*, Bd. 40, H. 3-4, 1910, S. 319.

WILLIAMS. Two Cases of Compound Fracture with Tetanic Symptoms: Recovery after Injection of Anti-tetanic Serum. *Lancet*, Nov. 19, 1910, p. 1485.

WIRT. Die Tetanie und ihre Bedeutung für die Chirurgie. *Centralbl. f. die Grenz. d. Med. u. Chir.*, Nr. 20 u. 21, 1910, S. 769, 801.

Alcoholism, etc.—RODIET. De la responsabilité au cours des délires par intoxications. *Journ. de Méd.*, No. 47, 1910, p. 789.

SIMONIN. La crise excito-motrice de l'alcoolisme aigu devant la justice militaire. *Journ. de Neurol.*, déc. 5, 1910, p. 381.

JUQUELIER et FILLASSIER. La jurisprudence des tribunaux en matière de séparation de corps et de divorce et les faits d'ivresse. *Rev. Neurol.*, nov. 30, 1910, p. 365.

CRICHTON MILLER. The Treatment of Morphinomania by the "Combined" Method. (Brit. Med. Assoc.) *Brit. Med. Journ.*, Nov. 19, 1910, p. 1595.

SPECIAL SENSES AND CRANIAL NERVES—

SKINNER. The X-Ray and the Special Senses. *N.Y. Med. Journ.*, Nov. 12, 1910, p. 963.

OSBORNE and KILVINGTON. Central Nervous Response to Peripheral Nervous Distortion. *Brain*, Part ciii., Vol. xxxiii., 1910, p. 261.

TAMAMSCHEFF. Paradoxe Bewegungen des oberen Lides, bei der Okulomotoriuslähmung. (Pseudo-Graefesches Phänomen.) *Klin. Monatsbl. f. Augenheilk.*, Okt. 1910, S. 479.

ELWORTHY. Miners' Nystagmus. *Brit. Med. Journ.*, Nov. 19, 1910, p. 1577.

WEBBER. Congenital Ophthalmoplegia Externa. *Boston Med. and Surg. Journ.*, Nov. 10, 1910, p. 721.

SYDNEY STEPHENSON. A Lecture on the Aftermath of Eye-Strain. *Lancet*, Dec. 17, 1910, p. 1743.

G. T. STEVENS. A Series of Studies of Nervous Affections in relation to the Adjustments of the Eye. *N.Y. Med. Journ.*, Nov. 19, 1910, p. 1001.

SOUQUES. Paralysie labio-glosso-laryngée progressive, probablement symptomatique de sclérose latérale amyotrophique, chez un vieillard. (Soc. de neurol.) *Rev. Neurol.*, nov. 30, 1910, p. 545.

COHN. Beitrag zur Frage der linksseitigen Rekurrenslähmung infolge von Mitralstenose. *Arch. f. Laryngol.*, Bd. 24, H. 1, 1910, S. 35.

MONTAGNON. Note sur les paralysies faciales. *Lyon Méd.*, No. 49, 1910, p. 934.

ERBEN. Fazialislähmung bei Nahrungsmittelvergiftungen. *Munch. med. Wchnschr.*, Nr. 50, 1910, S. 2643.

MEIGE. Les convulsions de la face. Une forme clinique de convulsion faciale bilatérale et médiane. *Rev. Neurol.*, nov. 15, 1910, p. 437.

SAINTON et BAUFLE. L'hémiatrophie faciale. *Gaz. des hôp.*, No. 135, 1910, p. 1841.

BIBLIOGRAPHY

9*

HAELLEIN. Ueber Störungen des musikalischen Gehörs. *Beit. zur Anat., etc., des Ohres, etc.*, Bd. 4, H. 1-2, 1910, S. 49.

MISCELLANEOUS SYMPTOMS AND CASES—

CLAUDE. Troubles nerveux de la ménopause. *Journ. des Prat.*, No. 51, 1910, p. 824.

BAUER et DESBOUIS. Trophœdème des membres supérieurs ayant débuté à la ménopause. *Nouv. Icon. de la Salpêtrière*, No. 4, 1910, p. 426.

PERRIN. Vomissements graves de la grossesse dans leurs rapports avec des lésions du système nerveux. (*Thèse.*) Paris: Steinheil, 1910.

ETIENNE. Sur les nævi systématiques et leur pathogénie. *Nouv. Icon. de la Salpêtrière*, No. 4, 1910, p. 399.

KÖNIGSTEIN. Sensibilitätsstörungen bei Vitiligo. *Wien. klin. Wchnschr.*, Nr. 49, 1910, S. 1745.

HUISMANS. Über Mitbewegungen. *D. Ztschr. f. Nervenheilk.*, Bd. 40, H. 3-4, 1910, S. 221.

ZUMSTEEG. Ueber Phonasthenie. *Arch. f. Laryngol.*, Bd. 24, H. 1, 1910, S. 1.

LEVINSTEIN. Nachtrag zu meiner Arbeit über einen Fall von traumatischer Anosmie. *Arch. f. Laryngol.*, Bd. 24, H. 1, 1910, S. 184.

BARRÉ et FLANDIN. Fracture spontanée de la tête humérale avec dislocation de l'épaule et arthropathie à type Tabétique du poignet, sans Tabes. (Soc. de neurol.) *Rev. Neurol.*, nov. 30, 1910, p. 531.

BIANCHI. La sindrome parietale. *Ann. di Nevrol.*, Anno 28, F. 3-4, 1910, p. 137.

A. HERZ. Zur Frage der Athetose bei Thalamuserkrankungen. *Arch. a. d. Neurol. Institut.*, Bd. 18, H. 3, 1910, S. 346.

GUILLAIN et PERNET. Syndrome rhumatismal chronique consécutif à un zona et localisé dans le territoire radiculaire de l'éruption. (Soc. de neurol.) *Rev. Neurol.*, nov. 30, 1910, p. 535.

E. A. CHILL. Erythromelalgia. *Practitioner*, Dec. 1910, p. 845.

ERB. Zur Klinik des intermittierenden Hinkens. *Münch. med. Wchnschr.*, Nr. 47, 1910, S. 2450.

CHEVALLIER. La brachymélie métapodiale congénitale. (Suite.) *Nouv. Icon. de la Salpêtrière*, No. 4, 1910, p. 429.

PERITZ. Über Eunuchoidie. *Neurol. Centralbl.*, Dez. 1, 1910, S. 1286.

ALFRED GORDON. Pathogenesis of the Toe Phenomenon. *N.Y. Med. Journ.*, Nov. 19, 1910, p. 1004.

PSYCHIATRY

ROUBINOVITCH. Aliénés et anormaux. Paris: Alcan, 1910. 6 fr.

LEWIS C. BRUCE. The Value of Physical Examination in Mental Diseases. *Edin. Med. Journ.*, Dec. 1910, p. 523.

AGUILEA. Sobre identificación dactiloscópica. *Arch. de Psiquiat. y Criminol.*, sept. y oct. 1910, p. 543.

OLIVIER et PELLET. La réaction de Porgès chez les idiots et les aliénés. *Prog. méd.*, No. 48, 1910, p. 638.

BECKER. Therapie der Geisteskrankheiten für praktische und Irrenärzte. Leipzig: Konegen, 1911. M. 2.60.

HEIJERMANS. 14 Stunden in der Irrenanstalt. Berlin: Boll & Pickhardt, 1910. M. —80.

VESTBERG. Om den psykiatriska kliniken München. *Upsala Läk. Förhand.*, Nov 11, 1910, S. 55.

- LIESKE. Die Internierung in Irrenanstalten zur Beobachtung des Geisteszustandes nach jetzigem Recht und nach dem Recht des neuen Strafprozessurteils. *Berl. klin. Wchnschr.*, No. 48, 1910, S. 2204.
- ROBERT JONES. The Teaching of Insanity to the Medical Student and Practitioner in relation to the Prevention of Mental Diseases. *Practitioner*, Dec. 1910, p. 776.
- LEIGE. Wandertrieb bei psychopathischen Kindern. *Ztschr. f. Erforsch. des jugend. Schwachsinn.*, Bd. 4, H. 3-4, 1910, S. 221.
- REJTO. Vergleichende rhino-otologische Untersuchungen an normalen und schwachbegabten Schulkinder. *Ztschr. f. Erforsch. des jugend. Schwachsinn.*, Bd. 4, H. 2-3, 1910, S. 200.
- GENIL-PERRIM. La psychiatrie dans l'œuvre de Cabanis. *Rev. de Psychiat.*, Oct. 1910, p. 398.
- SOUKHANOFF. Le patronage familial pour les aliénés le Saint-Petersbourg. *Rec. de Psychiat.*, Oct. 1910, p. 418.
- HERMANN. Zur Frage der Enziehbarkeit degenerierten Kinder. *Ztschr. f. Erforsch. des jugend. Schwachsinn.*, Bd. 4, H. 2-3, 1910, S. 154.
- RAECKE. Ueber Fürsorgeerziehung im Staate Neu-York. *Ztschr. f. Erforsch. des jugend. Schwachsinn.*, Bd. 4, H. 3-4, 1910, S. 165.
- WEYGANDT. Ein Beitrag zur Fürsorgeerziehung. *Ztschr. f. Erforsch. des jugend. Schwachsinn.*, Bd. 4, H. 3-4, 1910, S. 170.
- KLUGE. Ueber die vom psychiatrischen Standpunkte aus zu erfolgende Behandlung der schwer erziehbaren Fürsorgezöglinge. *Ztschr. f. Erforsch. des jugend. Schwachsinn.*, Bd. 4, H. 1-2, 1910, S. 254.
- MÖNKEMÖLLER. Bericht an das Landesdirektorium der Provinz Hannover über die Ergebnisse der psychiatrisch-neurologischen Untersuchungen der schulpflichtigen Fürsorgezöglinge der Provinz Hannover. *Ztschr. f. Erforsch. des jugend. Schwachsinn.*, Bd. 4, H. 2-3, 1910, S. 97.
- ORTIZ. Las rebeliones de los Afro-Cubanos. *Arch. de Psiquiat. y Criminol.*, sept. y oct. 1910, p. 560.
- LAURÈS. Confusion mentale et démence. *L'Encéphale*, déc. 10, 1910, p. 423.
- CLAUDE et LÉVY-VALENSI. Considérations sur l'état démentiel dans la démence précoce. (Soc. de Psychiat.) *L'Encéphale*, déc. 10, 1910, p. 470.
- BERZE. Die hereditären Beziehungen der Dementia præcox. Beitrag zur Hereditätslehre. Wien: Deuticke, 1910, M. 4.50.
- HALBERSTADT. Sur un état mixte pseudo-circulaire. (Manie dépressive suivie de manie improductive.) *L'Encéphale*, déc. 10, 1910, p. 452.
- DENY et LHERMITTE. Un nouveau syndrome anatomo-clinique; la démence paraplégique de l'encéphalite corticale chronique. *Semaine méd.*, No. 50, 1910, p. 585.
- BIANCHI. Il colera nei manicomi. *Ann. di Neurol.*, Anno 28, F. 3-4, 1910, p. 179.
- BARBIERI. Simulacion de amblyopia histerica. *Arch. de Psiquiat. y Criminol.*, sept. y oct. 1910, p. 606.
- BRAVO y MORENO. Imbecilidad grave congenita. *Arch. de Psiquiat. y Criminol.*, sept. y oct. 1910, p. 531.
- OBERSTEINER. Einige Bemerkungen zu der Traumspreche Krapelins. *Ztschr. f. Psychother.*, Bd. II., H. 5, 1910, S. 257.
- FORSTER. Ueber die forensische Beurteilung der Dämmerzustände. *Berl. klin. Wchnschr.*, No. 49, 1910, S. 2252.
- CLAUDE et SOURDEL. Phénomènes d'excitation psychique, puis délire alcoolique. Tuberculomes cérébraux et méningoencéphalite toxique. *Prog. méd.*, No. 48, 1910, p. 635.
- SCHNIZER. Gliose des Gehirns und Schwachsinn. *Ztschr. f. Erforsch. des jugend. Schwachsinn.*, Bd. 4, H. 3-4, 1910, S. 212.
- ESCHLE. Symptomenbilder des Irreseins als Typen des psychischen Konstitution. *Ztschr. f. Psychother.*, Bd. II., H. 5, 1910, S. 265.
- HENRY MEIGE. Trémophobie. Un nouveau cas. Conséquences médico-légales. *Journ. de Neurol.*, nov. 20, 1910, p. 361.

- BAUDOUIN et LÉVY-VALENSI. Paralyse générale juvénile chez une malade dont le père et la mère sont morts de paralysie générale. (Soc. de Psychiat.) *L'Encéphale*, déc. 10, 1910, p. 490.
- DUFOUR et HUBER. Paralyse générale précoce et grossesse. de neurol.) *Rev. Neurol.*, nov. 30, 1910, p. 524.
- MAILLARD. Un cas de paralysie générale avec syndrome parkinsonien du bras gauche. (Soc. de Psychiat.) *L'Encéphale*, déc. 10, 1910, p. 467.
- LABRÉ et GALLAIS. Les échanges urinaires chez quelques paralytiques généraux aux trois périodes classiques et à la période pré-mortelle. (Soc. de neurol.) *Rev. Neurol.*, nov. 30, 1910, p. 549.
- BONHOEFFER. Bemerkungen zur Behandlung und Diagnose der progressiven Paralyse. *Berl. klin. Wchnschr.*, No. 50, 1910, S. 2277.
- DONATH. Weitere Ergebnisse der Behandlung der progressiven Paralyse mit Natrium nucleicum. *Berl. klin. Wchnschr.*, Nr. 51, 1910, S. 2343.
- DIDE et CARROS. Sur la psychose maniaque-dépressive. (Soc. de Psychiat.) *L'Encéphale*, déc. 10, 1910, p. 493.
- MUMFORD. Post-Operative Psychoses. *Boston Med. and Surg. Journ.*, Dec. 1, 1910, p. 838.
- DIDE et GASSIOT. La psychose hallucinatoire chronique. (Soc. de Psychiat.) *L'Encéphale*, déc. 10, 1910, p. 492.
- E. E. MAYER. The Present Status of the Psychoneuroses and of Psychotherapy. *N.Y. Med. Journ.*, Dec. 10, 1910, p. 1168.

TREATMENT

- J. J. PUTNAM. Personal Experience with Freud's Psycho-Analytical Method. *Journ. Nerv. and Ment. Dis.*, Nov. 1910, p. 657.
- KOCKS. Suggestionnarkose und Hypnose. *Zentralbl. f. Gynäkol.*, Nr. 49, 1910, S. 1585.
- HERZ. Die Mitwirkung der Suggestion bei der physikalischen Behandlung der Herzkranken. *Med. Klinik*, Nr. 51, 1910, S. 2015.
- MARY L. NEFF. Occupation as a Therapeutic Agent in Insanity. *Med. Rec.*, Dec. 3, 1910, p. 996.
- UIBELEISEN. Beitrag zur Behandlung der Ataxieen. *Münch. med. Wchnschr.*, No. 48, 1910, S. 2532.
- SEMELAIGNE. A propos d'un article récent sur le traitement de l'agitation par le bercement. *L'Encéphale*, déc. 10, 1910, p. 466.
- EHRlich. Nervenstörungen und Salvarsanbehandlung. *Berl. klin. Wchnschr.*, Nr. 51, 1910, S. 2346.
- WENDT. Einige Versuche mit Veronalnatrium im Vergleiche zu der Wirkung von Methylsulfonal und Sulfonal bei erregten Geisteskranken. *Ther. Monatsh.*, Nov. 1910, S. 599.
- FREEMAN ALLEN. Spinal Anæsthesia. *Boston Med. and Surg. Journ.*, Nov. 10, 1910, p. 715.
- MARQUÈS. Radiothérapie de la syringomyélie. *Arch. d'Elect. méd.*, déc. 10, 1910, p. 999.
- HOROVITZ. Die Behandlung der Balggeschwülste mittels Elektrolyse. *Med. Klinik*, Nr. 49, 1910, S. 1935.
- LOUISE ROBINOVITCH. Electric Sleep and Analgesia by Means of frequently interrupted Direct Currents applied through Closed Wired Circuits. *Med. Rec.*, Dec. 10, 1910, p. 1035.
- Surgical.**—CUSHING. The Special Field of Neurological Surgery. Five Years Later. *Cleveland Med. Journ.*, Nov. 1910, p. 827.
- HILDEBRAND. Beitrag zur Hirnchirurgie. *D. med. Wchnschr.*, Nr. 49, 1910, S. 2274.
- DOYEN. Technique générale de la crâniectomie avec l'instrumentation électrique. *Arch. de Doyen*, Vol. i., No. 1, 1910, p. 12.

- HOMER B. SMITH. An Apparatus for supporting and holding the Head and Shoulders in Cerebellar and High Spinal Operations. *Journ. Amer. Med. Assoc.*, Nov. 26, 1910, p. 1859.
- HEILE. Zur chirurgische Behandlung der Spina bifida mit Hydrocephalus. *Berl. klin. Wchnschr.*, Nr. 50, 1910, S. 2298.
- CODIVILLA. Ueber Krampfanfälle nach orthopädischen Operationen. *D. med. Wchnschr.*, Nr. 49, 1910, S. 2134.
- ANTON. Ueber die operative Druckentlastung des Gehirnes bei Tumoren und anderen Gehirnkrankheiten. *Wien. klin. Wchnschr.*, Nr. 48, 1910, S. 1703.
- "606."—H. OPPENHEIM. Meine Erfahrungen mit Ehrlich-Hata-Behandlung bei Syphilogenen Nervenkrankheiten. *D. med. Wchnschr.*, Nr. 49, 1910, S. 2284.
- WILLIGE. Ueber Erfahrungen mit Ehrlich-Hata 606 an psychiatrisch neurologischen Material. *Münch. med. Wchnschr.*, No. 46, 1910, S. 2403.
- TREUPEL. Weitere Erfahrung mit Ehrlich-Hata-Injektionen insbesondere bei Lues des zentralen Nervensystems, bei Tabes und Paralyse. *Münch. med. Wchnschr.* No. 46, 1910, S. 2402.
- RILLE. Ueber eventuelle Nebenwirkungen an den Hirnnerven bei Behandlung mit Ehrlich's Präparat 606. *Berl. klin. Wchnschr.*, No. 50, 1910, S. 2231.
- KOWALEWSKI. Neuritis optica als Rezidiv nach Ehrlich-Hata 606. *Berl. klin. Wchnschr.*, No. 47, 1910, S. 2141.
- BECK. Ueber transitorische Fasererkrankung des Nervus vestibularis bei mit Ehrlich-Hata 606 behandelten Kranken. *Med. Klinik*, Nr. 50, 1910, S. 1969.
- CAMUS. Toxicité comparée pour le système nerveux des sels de mercure, de l'hectine et du "606." *Compt. rend. de la Soc. de Biol.*, No. 35, 1910, p. 508.

Bibliography

ANATOMY

BOSCH. Aus der Geschichte der Zellenlehre. Festschrift zum 100 jähr. Geburtstage ihres Begründers Theodor Schwann. Düsseldorf: Schwamm, 1910. M. 1.20.

MARINESCO et GOLDSTEIN. Sur l'architectonie de l'écorce de l'hippocampe et son rapport avec l'olfaction. *L'Encéphale*, jan. 10, 1911, p. 1.

EDINGER. Der Lobus parolfactorius. *Anat. Anz.*, Jan. 2, 1911, S. 1.

HOESTERMANN. Zur Kenntnis der efferenten Kleinhirnbahnen beim Menschen. *Neurol. Centralbl.*, Jan. 2, 1910, S. 3.

MUNK. Zur Anatomie und Physiologie der Sehsphäre der Grosshirnrinde. Berlin: Reimer, 1910. M. 1.

SARGENT. Some Points in the Anatomy of the Intracranial Blood Sinuses. *Amer. Journ. Anat.*, Jan. 1911, p. 69.

APPLETON. Descriptions of Two Brains of Natives of India. *Amer. Journ. Anat.*, Jan. 1911, p. 85.

VAN GEHUCHTEN et MOLHANT. Les lois de la dégénérescence wallérienne directe. *Nécrose*, Vol. xi., f. 1, 1910, p. 73.

VESTICAR. Les sangles des cellules de soutienement de l'organe de Corti. *Journ. de l'Anat.*, jan.-fév. 1911, p. 60.

NAGEOTTE. A propos de la communication de Mdle. Loyez sur la colorabilité de la myéline dans les pièces fixées au formol et incluses à la celloidine. *Compt. rend. de la Soc. de Biol.*, déc. 16, 1910, p. 517.

PRATI. Ha il nitrato d'argento azione fissativa immediata sulle neurofibrille? *Ann. di Freniat.*, Vol. 20, f. 3, 1910, p. 208.

LOYEZ. Coloration des Fibres Nerveuses par l'Hématoxyline au fer après fixation au form et inclusion à la Celloidine. (Soc. de neurol.) *Rec. Neurol.*, déc. 30, 1910 p. 666.

PHYSIOLOGY

MONAKOW. Aufbau und Lokalisation der Bewegungen beim Menschen. Leipzig: J. A. Barth, 1910. M. 1.20.

MONAKOW. Neue Gesichtspunkte in der Frage nach der Lokalisation im Grosshirn. Wiesbaden: Bergmann, 1911. M. 1.

LEGENDRE et MINOT. Formation de nouveaux prolongements par certaines cellules nerveuses des ganglions spinaux conservés à 39 degrés hors de l'organisme. *Compt. rend. de la Soc. de Biol.*, déc. 30, 1910, et jan. 13, 1911, pp. 618, 18.

TSCHIBOKSAROFF. Ueber sekretorische Nerven der Nebennieren. *Pfluger's Arch.*, Bd. 137, H. 1-2-3, 1910, S. 59.

LÉOPOLD-LÉVI et ROTHCHILD. Nouvelles Études sur la physio-pathologie du corps thyroïde et des autres glandes endocrines. Paris: Doin et fils, 1911. 12 frs.

- BURRIDGE. An Inquiry into some Chemical Factors of Fatigue. *Journ. Physiol.*, Dec. 31, 1910, p. 285.
- PALMÉN. Ueber die Einwirkung verschiedener Variabeln auf die Ermüdung. *Skand. Arch. f. Physiol.*, Bd. 24, H. 2-3-4, 1910, S. 197.
- KEITH LUCAS. On the Recovery of Muscle and Nerve after the Passage of a Propagated Disturbance. *Journ. Physiol.*, Dec. 31, 1910, p. 368.
- PALMÉN. Ueber die Bedeutung der Übung für die Erhöhung der Leistungsfähigkeit. *Skand. Arch. f. Physiol.*, Bd. 24, H. 2-3-4, 1910, S. 168.
- ELO und NIKULA. Zur Topographie des Wärmesinnes. *Skand. Arch. f. Physiol.*, Bd. 24, H. 2-3-4, 1910, S. 226.
- SICARD et BLOCH. Perméabilité méningée à l'arsénobenzol. *Compt. rend. de la Soc. de Biol.*, déc. 30, 1910, p. 624.
- LANGLEY and ORBELI. Observations on the Sympathetic and Sacral Autonomic System of the Frog. *Journ. Physiol.*, Dec. 31, 1910, p. 450.
- ROVEDA. Las papilas tactiles del apéndice digitiforme de la trumpa del elefante, Contribución al estudio de los órganos de los sentidos. *Anales de Psicología*. Vol. i., 1910, p. 254.
- COLE. Reactions of Frogs to Chlorides of Ammonium, Potassium, Sodium, and Lithium. *Journ. Comp. Neurol. and Psychol.*, Dec. 1910, p. 601.
- JOLLY. On the Latency of Sensory Nerve Endings to Mechanical Stimulation. (Proc. Physiol. Soc.) *Journ. Physiol.*, Dec. 31, 1910, p. xiv.
- WALLER. The Comparative Effects of Yohimbine, Protoveratrine, and Veratrine upon Isolated Nerve and upon Isolated Muscle. (Proc. Physiol. Soc.) *Journ. Physiol.*, Dec. 31, 1910, p. xi.
- CARLSON. The Effects of Stretching the Nerve on the Rate of Conduction of the Nervous Impulse. *Amer. Journ. Physiol.*, Jan. 2, 1910, p. 323.
- MEEK and LEAPER. Effects of Pressure on Conductivity in Nerve and Muscle. *Amer. Journ. Physiol.*, Jan. 2, 1911, p. 308.
- KOCH. Zur Kenntnis der Schwefelverbindungen des Nervensystems. II. Ueber ein Sulfatid aus Nervensubstanz. *Hoppe-Seyler's Ztschr.*, Bd. 76, H. 2-3, 1910, S. 95.
- KOSSEL. Ueber die chemische Beschaffenheit des Zellkerns. *Münch. med. Wchnschr.*, Nr. 2, 1911, S. 65.
- BECK und BIKELES. Zur Lehre Munk's über Beginn und Reihenfolge in der Ausbreitung der Bewegungen bei Rückenmarksreflexen, wie bei Tätigkeit der sogenannten "Prinzipalzentren." *Pflüger's Arch.*, Bd. 137, H. 1-2-3, 1910, S. 45.
- BECK und BIKELES. Die sogenannten Berührungsreflexe Munk's und die reflektorische Zehenbeugung bei Reizung der Fusssohle. *Pflüger's Arch.*, Bd. 137, H. 1-2-3, 1910, S. 34.
- WILKE und MEYERHOF. Experimentelle Untersuchungen zur Nernst'schen Theorie der elektrischen Nervenreizung. *Pflüger's Arch.*, Bd. 137, H. 1-2-3, 1910, S. 1.
- KOIKE. Ueber die Fortleitung des Erregungsvorganges in einer narkotisierten Nervenstrecke. *Ztschr. f. Biol.*, Bd. 55, H. 6-7, 1910, S. 311.
- MORGULIS. The Movements of the Earthworm. *Journ. Comp. Neurol. and Psychol.*, Dec. 1910, p. 615.
- WAUGH. The Role of Vision in the Mental Life of the Mouse. *Journ. Comp. Neurol. and Psychol.*, Dec. 1910, p. 549.

PSYCHOLOGY

- ISSERLIN. Ueber den Ablauf einfacher willkürlicher Bewegungen. *Psychol. Arb.*, Bd. 6, H. 1, 1911, S. 1.
- GOÉTT. Assoziationsversuche an Kindern. *Ztschr. f. Kinderheilk.*, Bd. 1, H. 3, 1910, S. 241.

- VEYGA. La enseñanza de la psicología. *Anales de Psicología*, Vol. i., 1910, p. 37.
- RODRIGUEZ ETCHART. La duración de los sentimientos, como la de las sensaciones, es mayor que la de sus respectivos excitantes. *Anales de Psicología*, Vol. i., 1910, p. 53.
- MERCANTE. El fotismo eromático de las palabras. Contribución al estudio de las aptitudes expresivas. *Anales de Psicología*, Vol. i., 1910, p. 60.
- SENET. Teoría de la atención. *Anales de Psicología*, Vol. i., 1910, p. 159.
- RODRIGUEZ ETCHART. La fe religiosa y su enseñanza. *Anales de Psicología*, Vol. i., 1910, p. 189.
- PINERO. Psicosis comunicada familiar. *Anales de Psicología*, Vol. i., 1910, p. 214.
- SENET. Las ascendientes del hombre según Ameghino. *Anales de Psicología*, Vol. i., 1910, p. 261.
- ONELLI. Anécdotas de psicología zoológica. *Anales de Psicología*, Vol. i., 1910, p. 314.
- INGEGNIEROS. Datos sobre la Psicología en la República Argentina. *Anales de Psicología*, Vol. i., 1910, p. 341.

PATHOLOGY

- BARRAQUER. Études cliniques et expérimentales de neurologie. Dégénération et régénération du système périphérique. *Rev. Neurol.*, déc. 30, 1910, p. 617.
- ZALLA. L'anatomia patologica della ghiandola tiroide nell' epilessia, nell' alcoolismo cronico e nella demenza precoce. *Riv. di Patol. nerv. e ment.*, Dic. 1910, p. 737.
- DUCKWORTH. A Human Cranium with an Osseous Tumour of the Frontal Region and a Shallow Pituitary Fossa. *Amer. Journ. Anat.*, Jan. 1911, p. 140.
- BARCLAY-SMITH. Multiple Anomaly in a Vertebral Column. *Amer. Journ. Anat.*, Jan. 1911, p. 144.

CLINICAL NEUROLOGY

GENERAL—

- OPPENHEIM. Text-book of Nervous Diseases, 2 vols. Authorised Translation by Alexander Bruce. Edinburgh: Otto Schulze, 1910. £2, 2s.
- BECHTEREW. Sur les rapports existant entre maladies nerveuses et mentales. *Arch. de Neurol.*, jan. 1911, p. 1.
- HOPPE. Procreation during Alcoholic Intoxication. *Brit. Journ. Inebriety*, Jan. 1911, p. 146.
- SARBÓ und KISS. Über den Wert der Wassermannschen Seroreaktion bei Nervenkrankheiten. *D. Ztschr. f. Nervenheilk.*, Bd. 40, H. 5-6, 1910, S. 347.
- CORSON-WHITE and LUDLAM. A Review of Serum Reactions in Cases of Nervous and Mental Diseases. *Journ. Nerv. and Ment. Dis.*, Dec. 1910, p. 657.
- HUTINEL. Les Associations morbides chez les enfants. Paris: Tancrede, 1910.
- K. STUART CROSS. On a Numerical Determination of the Relative Positions of certain Biological Types in the Evolutionary Scale, and of the Relative Values of various Cranial Measurements and Indices as Criteria. *Proc. Roy. Soc. of Edin.*, Vol. xxxi., Part i., p. 70.
- A. W. D. ROBERTSON. Craniological Observations on the Lengths, Breadths, and Heights of a Hundred Australian Aboriginal Crania. *Proc. Roy. Soc. of Edin.*, Vol. xxxi., Part i., p. 1.

MUSCLES—

- ROUSSY et ROSSI. Myasthénie grave d'Erb Goldflam. (Soc. de neurol.) *Rev. Neurol.*, déc. 30, 1910, p. 662.
- ODERY SYMES. Myasthenia with Enlargement of the Thymus Gland. *Brit. Med. Journ.*, Jan. 21, 1911, p. 133.
- HUMMEL. Amyotonia Congenita. Report of a Case. *Journ. Nerv. and Ment. Dis.*, Dec. 1910, p. 749.
- BERNHARDT. Bemerkungen zu der Arbeit Griffiths über Amyotonia congenita. *Arch. f. Kinderheilk.*, Bd. 55, N. 1-2, S. 128.

NERVES—

- CLOGNER. Die Ätiologie der Beriberi und die Stellung dieser Krankheit im nosologischen System. Leipzig: J. A. Barth, 1910. M. 2.50.
- SCHAUMANN. Die Ätiologie der Beriberi unter Berücksichtigung des gesamten Phosphorstoffwechsels. Leipzig: J. A. Barth, 1910. M. 15.
- PLATE. Ueber die Entstehung und Behandlung der Ischias scoliotica. *D. med. Wchnschr.*, Nr. 3, 1911, S. 116.
- GAUDUCHEAU. Un cas de Maladie de Rocklinghausen. (Soc. de neurol.) *Rev. Neurol.*, déc. 30, 1910, p. 673.
- BETTMANN. Herpes zoster nach Salvarsan-Injektion. *D. med. Wchnschr.*, Nr. 1, 1911, S. 13.

SPINAL CORD—

- Tabes Dorsalis.**—DAUWE et D'HOLLANDER. Étude anatomo-clinique sur une forme spéciale du tabès, tabès amyotrophique avec paralysie labio-glosso-laryngée progressive. *Nervæ*, Vol. xi, f. 1, 1910, p. 45.
- ASTWAZATUROW. Ueber Beziehungen zwischen Tabes und Leptomeningitis. *D. med. Wchnschr.*, Nr. 2, 1911, S. 64.
- BARBÉ. Maux Perforants multiples et Arthropathie tarsienne à type Tabétique sans Tabes. (Soc. de neurol.) *Rev. Neurol.*, déc. 15, 1910, p. 608.
- DU FOUR. Arthropathie Tabétique de l'articulation lombo-sacrée. Dislocation de l'articulation comprimant les nerfs de la Queue de cheval. (Soc. de neurol.) *Rev. Neurol.*, déc. 15, 1910, p. 602.
- BARNEY. The Care and Management of the Tabetic Bladder. III. Prognosis and Treatment. *Boston Med. and Surg. Journ.*, Jan. 5, 1911, p. 13.
- STRÜMPPELL. Pathologie und Behandlung der Tabes dorsalis. *Wien. med. Wchnschr.*, Nr. 1, 1911, S. 19.
- Poliomyelitis Anterior Acuta.**—LEVADITI. The Recent Epidemiological and Experimental Researches on Infantile Paralysis. *Journ. Roy. Instit. of Public Health*, Jan. 1911, p. 1.
- D. W. CURRIE and EDWIN BRAMWELL. Note on the Incubation Period of Acute Anterior Poliomyelitis. *Rev. Neurol. and Psychiat.*, Jan. 1911, p. 10.
- TINEL. Les lésions de la Poliomyélite épidémique. (Soc. de neurol.) *Rev. Neurol.*, déc. 30, 1910, p. 669.
- ECKERT. Ueber das akute Studium der epidemischen Kinderlähmung, nebst Bekanntgabe eines Falles von Poliomyelitis fulminans. *D. med. Wchnschr.*, Nr. 3, 1911, S. 113.
- PRÉVOST et MARTIN. Poliomyélite antérieure subaiguë. (Soc. de neurol.) *Rev. Neurol.*, déc. 30, 1910, p. 669.
- CLAUDE et VELTER. Poliomyélite antérieure avec signes d'atteinte légère des faisceaux pyramidaux. (Soc. de neurol.) *Rev. Neurol.*, déc. 15, 1910, p. 599.
- C. M. NICE. Symptoms and Diagnosis of Anterior Poliomyelitis. *Pediatrics*, Dec. 1910, p. 805.
- MOUSSOUS. Diagnostic différentiel de la méningite cérébro-spinale et de la poliomyélite épidémique de la paralysie infantile et de l'encéphalite de l'enfance. *Arch. de méd. des Enf.*, jan. 1911, p. 1.
- SHIDLER. Should Epidemic Poliomyelitis be Quarantined? *Pediatrics*, Dec. 1910, p. 810.

MENCIÈRE. Traitement de la paralysie infantile par les greffes musculotendineuses. Remarques anatomiques concernant les plexus et expliquant le mécanisme de la poliomyélite antérieure. *L'Encéphale*, jan. 10, 1911, p. 48.

Landry's Paralysis.—BOLTON. Die Landry'sche Paralyse. *Berl. klin. Wchnschr.*, Nr. 3, 1911, S. 111.

Disseminated Sclerosis.—LHERMITTE. Hyperplasie de l'Hypophyse dans la Sclérose en Plaques. (Soc. de neurol.) *Rev. Neurol.*, déc. 30, 1910, p. 665.

KLINGMANN. Visual Disturbances in Multiple Sclerosis. Their Relation to Changes in the Visual Field and Ophthalmoscopic Findings. Diagnostic Significance. *Journ. Nerv. and Ment. Dis.*, Dec. 1910, p. 734.

HABERFELD und SPIELER. Zur diffusen Hirn-Rückenmarkssklerose in Kindesalter. *D. Ztschr. f. Nervenheilk.*, Bd. 40, H. 5-6, 1910, S. 436.

BENDIXSOHN und SEROG. Multiple Sklerose und Hysterie in ihren gegenseitigen Beziehungen. *Med. Klinik*, Nr. 2 u. 3, 1911, Sn. 52, 101.

E. FARQUHAR BUZZARD. The Treatment of Disseminated Sclerosis: a Suggestion. *Lancet*, Jan. 14, 1910, p. 98.

Syringomyelia.—CLAUDE et VELTER. Syringomyélie Cervicale. Inversion du réflexe du Radius. (Soc. de neurol.) *Rev. Neurol.*, déc. 15, 1910, p. 601.

DONATH. Beitrag zur Syringomyelo-bulbie. *D. Ztschr. f. Nervenheilk.*, Bd. 40, H. 5-6, 1910, S. 420.

Pyramidal Degeneration.—KOELICHEN. Ein Fall von primärer Degeneration der Pyramidenstrangbahnen im Rückenmark mit ungewöhnlichem klinischen Verlauf. *D. Ztschr. f. Nervenheilk.*, Bd. 40, H. 5-6, 1910, S. 408.

Cerebro-spinal Fluid.—SIMON. Zur Untersuchung des Liquor cerebro-spinalis nach Mayerhofer. *Wien. klin. Wchnschr.*, Nr. 3, 1911, S. 94.

BRAIN—

Meningitis.—VOISIN et PAISSEAU. Sur 25 cas de méningite cérébro-spinale. *Arch. gén. de Méd.*, déc. 1910, p. 743.

DELAMARE et CAIN. Méningo-épendymite tuberculeuse, séreuse (Hydrocéphalie aiguë du nourrisson). (Soc. de neurol.) *Rev. de Neurol.*, déc. 30, 1910, p. 668.

SCHLESINGER. Über Pneumokokken-Meningitis und ihren Prognose. *Wien. med. Wchnschr.*, Nr. 1, 1911, S. 40.

LISSAUER. Zur Kenntnis der Meningitis carcinomatosa. *D. med. Wchnschr.*, Nr. 1, 1911, S. 16.

DELAMARE et CAIN. Un cas de méningo-épendymite séreuse tuberculeuse du nourrisson. *Rev. Neurol.*, déc. 15, 1910, p. 560.

ALEXANDER BRUCE and J. M. COTTERILL. Posterior Basal Meningitis; Acquired Hydrocephalus; Cured by Drainage of the Fourth Ventricle. *Rev. Neurol. and Psychiat.*, Jan. 1911, p. 1.

Thrombosis.—LÜDIN. Über Thrombose der Arteria vertebralis. *D. Ztschr. f. Nervenheilk.*, Bd. 40, H. 5-6, 1910, S. 380.

Bulbar Paralysis.—GUINOISEAU. La Paralysie pseudo-bulbaire dans la maladie de Little. (Thèse.) Paris: Steinheil, 1910.

Tumours.—SCHWARZ. Zur Casuistik der Kleinhirnbrückenwinkeltumoren. *St. Peters. med. Wchnschr.*, Nr. 1, 1911, S. 1.

BORNHAUPT. Zur operativen Behandlung der Brückenwinkeltumoren. *St. Peters. med. Wchnschr.*, Nr. 1, 1911, S. 5.

JUMENTIÉ. Lésions de l'Encéphale au cours du développement des Tumeurs de l'angle ponto-cérébelleux. (Soc. de neurol.) *Rev. Neurol.*, déc. 30, 1910, p. 670.

CLAUDE et CHABROL. Les sarcomes du bulbe (observations anatomo-cliniques). *Arch. gén. de Méd.*, déc. 1910, p. 734.

- LAIGNEL-LAVASTINE et BOUDON. Épithélioma cylindrique de l'Hémisphère cérébelleux droit secondaire à un Cancer du rectum. (Soc. de neurol.) *Rev. Neurol.*, déc. 30, 1910, p. 663.
- CROUZON et DELAMARE. Kyste sous-épendymaire. (Soc. de neurol.) *Rev. Neurol.*, déc. 30, 1910, p. 659.
- HERBST. Leukaemie mit Schädeltumoren bei einem einjährigen Kinde. *Monatsschr. f. Kinderheilk.*, Bd. 9, Nr. 8, 1910, S. 447.
- JOSEF FREUD. Ein Fall von Cysticercus cerebri mit Korsakoffischem Symptomenkomplex. *Wien. med. Wchnschr.*, Nr. 2, 1911, S. 138.
- W. G. SPILLER. Differential Diagnosis between Hydrocephalus without Enlargement of the Head and Brain Tumour, by Means of X-Rays. *Rev. Neurol. and Psychiat.*, Jan. 1911, p. 8.
- CLAUDE, VINCENT et LÉVY-VALENSI. De l'Hémiplégie homolatérale dans les Tumeurs Cérébrales. (Soc. de neurol.) *Rev. Neurol.*, déc. 15, 1910, p. 612.
- SCHÜLLER. Sellare Palliativtrepanation und Punktion des dritten Hirnventrikels. *Wien. med. Wchnschr.*, Nr. 3, 1911, S. 182.
- Syphilis.**—STRASMAN. Zwei Fälle von Syphilis des Zentralnervensystems mit Fieber, der zweite mit positivem Spirochätenbefund in Gehirn und Rückenmark. *D. Ztschr. f. Nervenheilk.*, Bd. 40, H. 5-6, 1910, S. 387.
- Pituitary Body.**—NEURATH. Ueber "Fettkinder." (Hypophysäre und eunuchoides Adipositas im Kindesalter.) *Wien. klin. Wchnschr.*, Nr. 2, 1911, S. 43.
- ASCENZI. Ipofisiectomia in una acromegalia. *Riv. di Patol. nerv. e ment.*, Dic. 1910, p. 743.
- Disorders of Speech.**—A. VAN GEHUCHTEN. Lésion de la zone lenticulaire gauche sans troubles de la parole, contribution à l'étude des aphasies. *Nervax.*, Vol. xi., f. 1, 1910, p. 5.
- SEPPILLI. Un caso di afasia amnestica (amnesia verborum) con rammollimento del lobulo parietale inferiore sinistro. *Riv. ital. di Neuropatol.*, Dic. 1910, p. 529.
- DORE. Sopra un caso di afasia amnesica permanente in soggetto epilettico. *Ann. di Freniat.*, Vol. xx., f. 3, 1910, p. 279.

GENERAL AND FUNCTIONAL DISEASES—

- Epilepsy.**—MARGARIA. Contributo allo studio delle paralisi transitorie post-epilettiche. *Ann. di Freniat.*, Vol. xx., f. 3, 1910, p. 273.
- PARAVICINI. Le bolle di retrazione nel cervelletto degli epilettici. *Ann. di Freniat.*, Vol. xx., f. 3, 1910, p. 214.
- HUERTAS. Tratamiento operatorio de la epilepsia esencial. *Arch. de Psiquiat. y Criminol.*, Nov. y Dic. 1910, p. 721.
- Chorea.**—CHARPENTIER. Chorée de Sydenham, maladie organique. (Soc. de neurol.) *Rev. Neurol.*, déc. 15, 1910, p. 604.
- JOHANN V. BOKAY. Erfolgreiche Behandlung von Chorea minor mit Salvarsan. *D. med. Wchnschr.*, Nr. 3, 1911, S. 111.
- Hysteria.**—KOSTYLEFF. Les derniers travaux de Freud et le problème de l'hystérie. *Arch. de Neurol.*, jan. 1911, p. 17.
- BYSCHOWSKI. Die differentielle Diagnose der Hysterie und verwandter organischer Nervenkrankheiten. *Wien. klin. Wchnschr.*, Nr. 2, 1911, S. 60.
- Neurasthenia.**—P. C. CAMPBELL SMITH. Neurasthenia Minor. *Practitioner*, Jan. 1911, p. 107.
- C. W. SUCKLING. Neurasthenia and Movable Kidney. *Practitioner*, Jan. 1911, p. 96.
- A. F. TREDGOLD. Neurasthenia and Insanity. *Practitioner*, Jan. 1911, p. 84.
- H. CAMPBELL THOMSON. Mental Therapeutics in Neurasthenia. *Practitioner*, Jan. 1911, p. 76.

- GORDON HOLMES. The Sexual Element in the Neurasthenia of Women. *Practitioner*, Jan. 1911, p. 61.
- CLIVE RIVIÈRE. Neurasthenia in Children. *Practitioner*, Jan. 1911, p. 38.
- ROBERT A. FLEMING. Neurasthenia and Gastralgia. *Practitioner*, Jan. 1911, p. 29.
- ERNEST CLARKE. Neurasthenia and Eye-Strain. *Practitioner*, Jan. 1911, p. 24.
- DAVID FERRIER. Neurasthenia and Drugs. *Practitioner*, Jan. 1911, p. 11.
- F. W. MOTT. Neurasthenia and some Associated Conditions. *Practitioner*, Jan. 1911, p. 1.
- D. NÖEL PATON. The Treatment of Neurasthenia by Diet. *Practitioner*, Jan. 1911, p. 122.
- FLETCHER BEACH. The Educational Treatment of Neurasthenia. *Practitioner*, Jan. 1911, p. 133.
- C. W. BUCKLEY. The Treatment of Neurasthenia by Rest, Diet, and Massage. *Practitioner*, Jan. 1911, p. 140.
- STÉPHANE LEDUC. Electrical Treatment of Neurasthenia. *Practitioner*, Jan. 1911, p. 151.
- NEVILLE WOOD. The Climatic, Balneo-Therapeutic, and Sanatorium Treatment of Neurasthenia. *Practitioner*, Jan. 1911, p. 166.
- RIVIÈRE. The Treatment of Neurasthenia by Physical Methods. *Practitioner*, Jan. 1911, p. 177.
- LLOYD TUCKEY. Treatment of Neurasthenia by Hypnotism and Suggestion. *Practitioner*, Jan. 1911, p. 185.
- RUCKER. End Results of Surgical Operations on Nervous Women. *N.Y. Med. Journ.*, Jan. 7, 1911, p. 22.
- Traumatic Neuroses.**—GLYNN. The Traumatic Neuroses. *Med. Press*, Jan. 11, 1911, p. 34.
- WILFRED HARRIS. Traumatic Neurasthenia. *Practitioner*, Jan. 1911, p. 16.
- TOM A. WILLIAMS. The more Certain Control of Traumatic Neurosis. *Practitioner*, Jan. 1911, p. 119.
- SCHALLER. Einige Zahlen über Unfallneurose, Rente und Kapitalabfindung. Stuttgart: Schaller, 1910. M. 1.50.
- Neuralgia.**—SICARD. Les cures successives d'Alcoolisation locale au cours de la Névralgie Faciale. (Soc. de neurol.) *Rev. Neurol.*, déc. 15, 1910, p. 603.
- Exophthalmic Goitre.**—SATTler. Die Basedow'sche Krankheit. II. (Schluss) Teile. Die verschiedenen Formen, Verlauf, Dauer, Ausgang, etc. Leipzig: Engelmann, 1910. M. 6.
- E. W. HEY GROVES and CECIL JOLL. Thyroid Grafting and Surgical Treatment of Exophthalmic Goitre. *Brit. Med. Journ.*, Dec. 24, 1910, p. 1965.
- Psychasthenia.**—SERGE SOUKHANOFF. De la combinaison de la psychasthénie et de la cyclothymie. *Rev. Neurol.*, déc. 15, 1910, p. 557.
- Alcoholism, etc.**—NEWTON. Alcohol and Primitive Races. *Brit. Journ. Inebriety*, Jan. 1911, p. 121.
- HYSLOP. The Influence of Parental Alcoholism on the Physique and Ability of the Offspring. *Lancet*, Jan. 14, 1910, p. 77.
- OSCAR JENNINGS. Morphinisme et Morphinomanie. Les Différentes Methodes de Sevrage sans Souffrance. Paris: Vigot Frères, 1910. 2s.
- ASTLEY COOPER. The Treatment of Alcohol Inebriety by Psychotherapy. *Brit. Journ. Inebriety*, Jan. 1911, p. 135.

SPECIAL SENSES AND CRANIAL NERVES—

- INGEGNIEROS. Pseudo discromatopsia por amnesia verbal en una hemianopsia cortical. *Anales de Psicología*, Vol. i., 1910 p. 244.

- PICHLER. Ueber die Ursachen des Flimmerskotoms und seine Behandlung. *Wien. klin. Wchnschr.*, Nr. 2, 1911, S. 51.
- ALFRED GORDON. Optic Nerve Changes associated with Cranial Malformations. *N. Y. Med. Journ.*, Jan. 7, 1911, p. 7.
- STERN. Ein weiterer Fall von Augenmuskellähmung nach Salvarsan. *D. med. Wchnschr.*, Nr. 1, 1911, S. 15.
- STEVENS. A Series of Studies of Nervous Affections in Relation to the Adjustments of the Eyes. *N. Y. Med. Journ.*, Jan. 7, 1911, p. 3.
- ROASENDA. Sopra un caso di paralisi facciale recidivante in cui l'eccitamento elettrico del nervo e dei muscoli di un lato provocava contrazione in muscoli del lato opposto. *Ann. di Freniat.*, Vol. xx., f. 3, 1910, p. 193.

MISCELLANEOUS SYMPTOMS AND CASES—

- SIGMUND FREUD. Three Contributions to the Sexual Theory. Translation by A. A. Brill. *Nerv. and Ment. Dis. Monograph Series*, No. 7. New York, 1910.
- SOMMER. Zur Theorie der Verwandtenehe und des Ahnenverlustes bei Menschen und Tieren. *Klinik f. psych. u. nerv. Krankh.*, Bd. v, H. 4, 1910, S. 291.
- REISS. Die elektrische Entartsreaktion. Berlin: Springer, 1911. M. 5.
- MARQUÉS et GASSIOT. Corps étranger intracranien et épilepsie jacksonienne. *Bull. de la Soc. Française d'Électrother.*, déc. 1910, p. 283.
- ROUSSY et FOIX. Étude anatomique sur coupes sériées d'un cas d'Hémianesthésie par lésion corticale. (Soc. de neurol.) *Rev. Neurol.*, déc. 30, 1910, p. 660.
- JOSEFOWITSCH und LIFSCHÜTZ. Zur Lehre von den Lalschen Gefässkrisen. (Ein Fall gastrischer Krisen, die jedesmal mit dem Westphalschen Symptom verbunden waren.) *D. Ztschr. f. Nervenheilk.*, Bd. 40, H. 5-6, 1910, S. 464.
- ROSE et MAGITOT. Lésion des Tubercules Quadrijumeaux antérieurs et des régions latérales voisines (tubercule?). (Soc. de neurol.) *Rev. Neurol.*, déc. 15, 1910, p. 610.
- PAILLARD et LELIÈVRE. Syndrome thalamique. *Bull. de la Soc. Anat.*, No. 8, 1910, p. 791.
- D. F. HARRIS. The Relations of Insomnia to Types of Sleep. *Science Prog.*, Oct. 1910, p. 213.
- PELNÁR. Eine akute Form des intermittierenden Hinkens: Arteriitis acuta. *Neurol. Centralbl.*, Jan. 2, 1910, S. 9.
- HERMANN SCHLESINGER. Zur Klinik des intermittierenden Hinkens. *Neurol. Centralbl.*, Jan. 2, 1910, S. 6.
- SYDNEY SCOTT. Vertigo. Critical Review. *Quart. Journ. of Med.*, Jan. 1911, p. 242.
- JOSEFSON. Om Infantilism (Forts). *Upsala Läk. Förhandl.*, Dec. 23, 1910, S. 160.
- ARMAND-DELILLE et LAGANE. Naevi à Topographie Radiculaire chez un enfant de 5 ans. (Soc. de neurol.) *Rev. Neurol.*, déc. 15, 1910, p. 606.
- WHITNELL. A Ligament acting as a Check to the Action of the Levator Palpebræ Superioris Muscle. *Amer. Journ. Anat.*, Jan. 1911, p. 131.
- SOMMER. Bemerkungen zu einem Fall von vererbter Sechsfingerigkeit. *Klinik f. psych. u. nerv. Krankheiten*, Bd. 5, H. 4, 1910, S. 297.
- ERICH SALOMON. Eine zweckmässige Art den Patellarreflex auszulösen. *Neurol. Centralbl.*, Nr. 2, 1911, S. 80.
- CARL BEHR. Die Entstehung der Sehnervenveränderungen beim Turmschädel. Ein Beitrag zur Theorie der Stauungspapille. *Neurol. Centralbl.*, Nr. 2, 1911, S. 65.
- PIÉRON. L'Analyse du réflexe rotulien. (Soc. de neurol.) *Rev. Neurol.*, déc. 15, 1910, p. 597.
- ALTHOFF. Zur Auslösung des Achillessehnenreflexes. *Münch. med. Wchnschr.*, Nr. 2, 1911, S. 86.

PSYCHIATRY

- F. W. MOTT. Heredity and Insanity. *Eugenics Rev.*, Jan. 1911.
- RONCORONI. Le malattie mentali dell'età involutiva. *Ann. di Freniat.*, Vol. xx., f. 3, 1910, p. 225.
- ROBERT JONES. Mental Evolution and the Insanities of To-day. *Hospital*, Oct. 29, 1910, p. 127.
- SOMMER. Psychiatrie und Soziologie. *Klinik f. psych. u. nerv. Krankh.*, Bd. 5, H. 4, 1910, S. 377.
- MACDONALD. Hints for the General Practitioner on the Nature, Etiology, and Early Diagnosis of Insanity. *Med. Rec.*, Jan. 7, 1911, p. 3.
- HELLER. Vierte österreichische Konferenz der Schwachsinnigenfürsorge. *Ztschr. f. d. Erforsch. d. jugend. Schwachsinn*, Bd. 4, H. 4, 1910, S. 368.
- WEYGANDT. Ein Schwachsinn-Prüfungskasten. *Ztschr. f. d. Erforsch. d. jugend. Schwachsinn*, Bd. 4, H. 4, 1910, S. 363.
- DROMARD et SENEGES. Maigreur pathologique chez un aliéné hypocondriaque. *L'Encéphale*, jan. 10, 1911, p. 64.
- VALLETEAU de MOULLIAC et COZANET. Troubles psychiques de la dengue. *L'Encéphale*, jan. 10, 1911, p. 27.
- BORDA. Anatomia patologica de la demencia senil. *Arch. de Psiquiat. y Criminol.*, Nov. y Dic. 1910, p. 659.
- ETCHART. Concepto actual de la teoria de las emociones. *Arch. de Psiquiat. y Criminol.*, Nov. y Dic. 1910, p. 641.
- MARGARIA. La psicosi nuziale; casi clinici e considerazioni. *Ann. di Freniat.* Vol. xx., f. 3, 1910, p. 259.
- MARGARIA. I caratteri degenerativi somatici nei frenastenici. *Ann. di Freniat.*, Vol. xx., f. 3, 1910, p. 249.
- SACERDOTI. Contributo allo studio delle fughe dei ragazzi. *Ann. di Freniat.*, Vol. xx., f. 3, 1910, p. 239.
- RÉMOND et VOIVENEL. Essai sur la Valeur de la Conception Kraepelinienne de la Manie et de la Mélancolie. *Ann. Méd.-Psychol.*, No. 1, 1911, p. 19.
- DUPOUY. L'optimisme D'Edgar Poë. *Ann. Méd.-Psychol.*, No. 1, 1911, p. 5.
- TALMEY. Manic-Depressive Insanity, or Recurrent Insanity. *N.Y. Med. Journ.*, Jan. 7, 1911, p. 19.
- A. MARIE, A. CHAILLOU et L. MACAULIFFE. Anthropologie psychiatrique. Le type cerebral. *Arch. de Neurol.*, jan. 1911, p. 8.
- JOLLY. Zur Prognose der Puerperalpsychosen. *Münch. med. Wchnschr.*, Nr. 3, 1911, S. 130.
- STRANSKY. Bemerkungen zur Theorie des manisch-depressiven Irreseins. *Wien. med. Wchnschr.*, Nr. 2, 1911, S. 126.
- DUFOUR et GUICHARDON. Sur un cas d'amnésie essentielle. (Soc. de Psychiat.) *L'Encéphale*, jan. 10, 1911, p. 86.
- KAHN. Épisode confusionnel suivi d'amnésie contemporaine de la ménopause. (Soc. de Psychiat.) *L'Encéphale*, jan. 10, 1911, p. 83.
- ADOLF MEYER. The Nature and Conception of Dementia Præcox. *Journ. Abnorm. Psychol.*, Dec. 1910-Jan. 1911, p. 274.
- AUGUST HOCH. On Some of the Mental Mechanisms in Dementia Præcox. *Journ. Abnorm. Psychol.*, Dec. 1910-Jan. 1911, p. 255.
- FÉLIX ROSE. A propos de la précipito-réaction du sang des déments précoces. (Soc. de Psychiat.) *L'Encéphale*, jan. 10, 1911, p. 82.
- VICTORIO. Los sindromas paralíticos generales. *Arch. de Psiquiat. y Criminol.*, Nov. y Dic. 1910, p. 734.
- SCHWINN. Some of the Difficulties encountered in making a Diagnosis of Paresis. *Journ. Nerv. and Ment. Dis.*, Dec. 1910, p. 754.
- LABBÉ et GALLAIS. Urologie des paralytiques généraux. (Soc. de Psychiat.) *L'Encéphale*, jan. 10, 1911, p. 89.
- FÉLIX ROSE. Paralyse générale à début anormal. (Soc. de Psychiat.) *L'Encéphale*, jan. 10, 1911, p. 80.

- GALLAIS. Deux cas de rémission progressive au cours de la paralysie générale chez la femme. (Soc. de Psychiat.) *L'Encéphale*, jan. 10, 1911, p. 74.
- SALVADOR. La moralidad en las prisiones españolas. *Arch. de Psiquiat. y Criminol.*, Nov. y Dic. 1910, p. 727.
- HEIJERMANS. 24 Stunden in der Irrenanstalt. Berlin: Boll & Pickardt, 1910. M. —80.
- SOMMER. Vergleich der deutschen und österreichischen Strafgesetzbücher, sowie der Vorentwürfe für die neuen Strafgesetzbücher in Deutschland und Oesterreich vom psychiatrischen Standpunkt. *Klinik f. psych. u. nerv. Krankh.*, Bd. 5, H. 4, 1910, S. 346.
- SOMMER. Die Stellung der forensischen Psychiatrie. *Klinik f. psych. u. nerv. Krankh.*, Bd. 5, H. 4, 1910, S. 309.
- KOLLER. Die Zählung der geistig gebrechlichen Kinder der schulpflichtigen Alters im Kanton Appenzell. *Ztschr. f. d. Erforsch d. jugend. Schwachsinn.*, Bd. 4, H. 4, 1910, S. 289.
- ZIEGLER. Unterscheidet sich das Unterrichtsverfahren in des Schwachbegabenschule prinzipiell von der in der Normalenschule? *Ztschr. f. d. Erforsch d. jugend. Schwachsinn.*, Bd. 4, H. 4, 1910, S. 356.
- BÖTTICHER. Verbreitung und Bekämpfung des Typhus in Irrenanstalten. *Ztschr. f. Hygiene*, Bd. 67, H. 2, 1911, S. 243.
- GARÇON. L'État dangereux. *Rev. de Psychiat.*, nov. 1910, p. 442.
- WAGNER VON JAUREGG. Der Zurechnungsunfähigkeits-Paragraph im Strafgesetzentwürfe. *Wien. med. Wchnschr.*, Nr. 3, 1911, S. 178.
- PAPADAKI. L'Aliénation mentale d'un prisonnier. *L'Encéphale*, jan. 10, 1911, p. 67.
- MACDONALD. Tonic Cold Applications in Acute Toxic Insanities. *Amer. Journ. Physiol. Therap.*, Jan. 1911, p. 279.

TREATMENT *

- BROWN. Macht der Hypnose. Ein Lehrbuch des persönl. Magnetismus, Hypnotismus und der Suggestion nach amerik. Methode. Leipzig: Wendel, 1910. M. 1.60.
- ELDER. Heilung des Stotterns nach gesanglichen Grundsätzen. Leipzig: Merseburger, 1911. M. 2.25.
- PECK. A Purin-free Diet in Certain Functional Nervous Disorders. *Amer. Journ. Physiol. Therap.*, Jan. 1911, p. 294.
- TOM A. WILLIAMS. Physiological Measures in the Therapeutics of Nervous Disease. *Amer. Journ. Physiol. Therap.*, Jan. 1911, p. 264.
- KALISCHER. Über Adalin, ein neues Sedativum und Hypnotikum. *Neurol. Centralbl.*, Jan. 2, 1910, S. 12.
- ERNEST JONES. The Action of Suggestion in Psychotherapy. *Journ. Abnorm. Psychol.*, Dec. 1910-Jan. 1911, p. 217.
- KLOSE. Neuere Thymusforschungen und ihre Bedeutung für die Kinderheilkunde. *Arch. f. Kinderheilk.*, Bd. 55, H. 1-2, S. 1.
- MACALISTER. The Effect of Environment on the Physical and Mental Development of School Children. *Journ. Roy. Instit. of Public Health*, Jan. 1911, p. 14.
- FROELICH. Beobachtungen über ein neues Sedativum und Emschläferungsmittel, das Adalin. *Berl. klin. Wchnschr.*, No. 1, 1911, S. 18.
- HOCHSINGER. Erbsyphilis - Behandlung und Neuropathie. *Wien. med. Wchnschr.*, Nr. 2, 1911, S. 122.
- BENARIO. Ueber syphilitische Neurorezidive, insbesondere solche nach Quecksilberbehandlung. *Münch. med. Wchnschr.*, Nr. 1, 1911, S. 20.
- MARCUS. Die Ehrlich-Hata-Behandlung bei syphilitischen Erkrankungen des Nervensystems. *Münch. med. Wchnschr.*, Nr. 2, 1911, S. 76.

* A number of references to papers on Treatment are included in the Bibliography under individual diseases.

Bibliography

ANATOMY

- RONCORONI. Ricerche sulla citoarchitettura corticale. *Riv. di Patol. nerv. e ment.*, gen. 1911, p. 1.
- MONTESANO. Osservazioni sulle strutture nevrogliche impregnate col metodo del Bielschowsky. *Riv. ital. di Neuropatol.*, gen. 1911, p. 15.
- FUSE. Die Topographie, die feinere Architektonik und die zentralen Verbindungen des Abducenskerns bei einzelnen Repräsentanten der Säuger. Nebst kritischen Bemerkungen über die Neurobiotaxis (Ariëns Kappers) bei diesem Kern. *Neurol. Centralbl.*, Feb. 15, 1911, S. 178.
- ALEXANDER BRUCE and J. W. DAWSON. On the Relations of the Lymphatics of the Spinal Cord. *Journ. of Pathol.*, Oct. 1910, p. 169.
- DANDY and GOETSCH. The Blood Supply of the Pituitary Body. *Amer. Journ. Anat.*, Jan. 1911, p. 137.
- WALGASCHKO. Topographische Beziehungen des Gehirns der Hirnhäute und Hirngefäße zum Schläfenbein. *Arch. f. Anat.*, H. 3-4, 1910, S. 89.
- CERLETTI. Die Gefäßvermehrung im Zentralnervensystem. Jena: Fischer, 1911.
- LEONARD KIDD. The Mesencephalic Fifth Root. Further Remarks. *Rev. Neurol. and Psychiat.*, Feb. 1911, p. 62.
- GORDON WILSON. The Nerves and Nerve-endings in the Membrana tympani in Man. *Amer. Journ. Anat.*, Jan. 1911, p. 101.
- LEISEGANG. Ein Konservierungsverfahren für Gehirnschnitte. *Ztschr. f. Mikros.*, Bd. 27, H. 3, S. 369.
- ROSANOFF and WISEMAN. A New Method for the Estimation of Cranial Capacity at Autopsy. *Rev. Neurol. and Psychiat.*, Feb. 1911, p. 54.
- SABIN. Model showing the Tracts of Fibres medullated in a new-born Baby's Brain. *Amer. Journ. Anat.*, Jan. 1911, p. 113.

PHYSIOLOGY

- MONAKOW. Neue Gesichtspunkte in der Frage nach der Lokalisation im Grosshirn. Wiesbaden: Bergmann, 1911. M. 1.40.
- BECHTEREW. Die Funktionen der Nervencentra. (Schluss-Heft.) Hemisphären des Grosshirns. Jena: Fischer, 1911. M. 24.
- LÖWY. Zur Lokalisation im Kleinhirn. (Vorläufige Mitteilung.) *Neurol. Centralbl.*, Feb. 15, 1911, S. 184.
- LÉVY-VALENSI. Physiologie du corps calleux. *Presse méd.*, No. 8, 1911, p. 74.
- KRAMER. The Function of Choroid Plexuses of the Cerebral Ventricles and its Relation to that of the Pituitary Gland. *Journ. Amer. Med. Assoc.*, No. 4, 1911, p. 265.
- HIRSCHFELD. Die Wirkung des Vasotonin auf die Blutzirkulation im menschlichen Gehirn. *Monatsschr. f. Psychiat. u. Neurol.*, H. 1, 1911, S. 37.
- KOCH and MOSTROM. The Function of the Brain Phosphatids in the Physiological Action of Strychnine. *Journ. Pharmacol.*, Dec. 1910, p. 265.
- KOCH and PIKE. The Relation of the Phosphatids to the Sodium and Potassium of the Neuron. *Journ. Pharmacol.*, Dec. 1910, p. 245.
- KOCH and WILLIAMS. The Relation of Brain Phosphatids to Tissue Metabolites. *Journ. Pharmacol.*, Dec. 1910, p. 253.

- HILL. The Position occupied by the Production of Heat in the Chain of Processes constituting a Muscular Contraction. *Journ. Physiol.*, Vol. xlii., No. 1, 1911, p. 1.
- BARBOUR and ABEL. Tetanic Convulsions in Frogs. *Journ. Pharmacol.*, Dec. 1910, p. 167.
- ROSSI. Contribution à l'innervation spinale segmentaire de la région lombosacrée de la peau chez le chien. *Arch. ital. de biol.*, T. 54, F. 1, 1910, p. 65.
- LANGLEY. The Origin and Course of the Vaso-Motor Fibres of the Frog's Foot. *Journ. Physiol.*, Vol. xli., No. 6, 1911, p. 483.

PSYCHOLOGY

- T. CLAYE SHAW. An Address on the Clinical Aspects of Emotion and Action. *Lancet*, Feb. 11, 1911, p. 353.
- CORIAT. The Psychopathology of Apraxia. *Amer. Journ. Psychol.*, Jan. 1911, p. 65.
- HOLLINGWORTH. The Psychology of Drowsiness. *Amer. Journ. Psychol.*, Jan. 1911, p. 99.
- ANGELL. Factors affecting Reaction Time. *Amer. Journ. Psychol.*, Jan. 1911, p. 86.
- TOULOUSE et PIÉRON. Technique de Psychologie Expérimentale. Paris: Octave Doin et fils, 1911. 10 fr.
- KAKISE. An experimental Study of the Conscious Concomitants of Understanding. *Amer. Journ. Psychol.*, Jan. 1911, p. 14.
- MICHOTTE et PRÜM. Étude expérimentale sur le choix volontaire et ses antécédents immédiats. *Arch. de Psychol.*, déc. 1910, p. 115.

PATHOLOGY

- LA SALLE ARCHAMBAULT. Contribution à l'anatomie et à la pathogénie de la soi-disant agénésie du corps calleux. *Nouv. Icon. de la Salpêtrière*, No. 5, 1910, p. 505.
- LA SALLE ARCHAMBAULT. Contribution à l'anatomie et à la pathogénie de la soi-disant agénésie du corps calleux. (Suite et fin.) *Nouv. Icon. de la Salpêtrière*, nov.-déc. 1910, p. 630.
- CLAUDE, VINCENT et LEVY-VALENSI. Ependymite subaiguë avec hydrocéphalie et cavités médullaires du type syringomyélique. *Presse méd.*, No. 12, 1911, p. 110.
- ROSSI. Les phénomènes de régénération qui s'accomplissent dans la moelle épinière. *Arch. ital. de biol.*, T. 54, F. 1, 1911, p. 30.
- NAGEOTTE et LÉON-KINDBERG. Lésions fines du Cervelet. *Lab. d'Histol. du Coll. de France*, 1910, p. 51.
- LAFORA. Beitrag zur Histopathologie des Rückenmarkes bei der Dementia arterio-sclerotica und senilis. *Monatsschr. f. Psychiat. u. Neurol.*, H. 1, 1911, S. 1.
- HARRIS and SHACKELL. The Effect of Vacuum Desiccation on the Virus of Rabies. *Journ. Infect. Dis.*, No. 1, 1911, p. 47.
- ELSNER. Metastasis to the Nervous System from Cancer of the Stomach and Intestines. *N. Y. Med. Journ.*, Jan. 21, 1911, p. 105.
- GEIS. Die Beziehungen der Gefässerkrankungen der Netzhaut zu denen des Gehirns. *Klin. Monatsbl. f. Augenheilk.*, Jan. 1911, S. 1.
- SIMCHOWICZ. Histologische Studien über die senile Demenz. *Histol. Arb.*, Bd. 4, H. 2, S. 267.
- LOEWE. Ueber den Phosphorstoffwechsel bei Psychosen und Neurosen. *Zschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 4, H. 2, 1911, S. 250.
- RAUBITSCHKE. Zur Kenntnis der Pathogenese der Pellagra. *Centralbl. f. Bact.*, Bd. 57, H. 3, S. 193.
- HUNZIKER. Ueber einen Fall von Iniencephalie. *Frankf. Zschr. f. Pathol.*, Bd. 6, N. 2, S. 221.
- MALESANI. Sur les dégénérescences des centres nerveux chez les pigeons consécutifs à l'extirpation des canaux demi-circulaires. *Arch. ital. de biol.*, T. 54, F. 1, 1910, S. 49.
- PERUSINI. Sopra speciali cellule degli infiltrati nel sistema nervoso centrale. *Riv. Speriment. di Freniat.*, 1910, Vol. xxxvi., p. 721.

CLINICAL NEUROLOGY

GENERAL—

- Vierte Jahresversammlung der Gesellschaft Deutscher Nervenärzte in Berlin am 6-8 Oktober 1910. *D. Ztschr. f. Nervenheilk.*, Bd. 41, H. 1-3, 1911, S. 1.
- C. S. MYERS. The Pitfalls of "Mental Tests." *Brit. Med. Journ.*, Jan. 29, 1911, p. 195.
- EASTMAN. The Relative Importance of Hereditary and Acquired Causes in the Production of the Anatomical Stigmata. *Neurographs*, Vol. i., No. 3, 1911, p. 173.
- JOHN EWENS. Simulated Disease occurring in Persons of Hysterical or Neurotic Temperament. *Brit. Med. Journ.*, Feb. 18, 1911, p. 358.
- LEWANDOWSKY. Richtshirnnigkeit bei einem Rechtshänder. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 4, H. 2, 1911, S. 211.
- RESNIKOW und DAWIDENKOW. Beiträge zur Plethysmographie des menschlichen Gehirns. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 4, H. 2, 1911, S. 129.
- G. I. JONES. Chronic Influenza and its Relation to Neuropathy. *Amer. Journ. Med. Sc.*, Feb. 1911, p. 267.

MUSCLES—

- TILNEY and MITCHELL SMITH. Contribution to the Study of Myasthenia Gravis, with a Suggestion for a Change in Nomenclature. *Neurographs*, Vol. i., No. 3, 1911, p. 178.
- SOMERVILLE HASTINGS. A Case of Early Myasthenia Gravis with Laryngeal Symptoms. (Laryngol. Section.) *Proc. Roy. Soc. of Med.*, Jan. 1911, p. 39.
- EDWARD GROUND. A Fatal Case of Myasthenia Gravis. *Lancet*, Jan. 28, 1911, p. 229.
- VARIOT. Un cas d'Atonie Musculaire Congénitale (Maladie d'Oppenheim). (Soc. de neurol.) *Rev. Neurol.*, jan. 30, 1911, p. 138.
- PEMBERTON. A Metabolic Study of Myotonia Atrophica. *Amer. Journ. Med. Sc.*, Feb. 1911, p. 253.

NERVES—

- WILFRED HARRIS. Traumatic Neuritis of Inner Cord (Klumpke-paralysis); Prefixed Type of Plexus. (Neurol. Section.) *Proc. Roy. Soc. of Med.*, Jan. 1911, p. 31.
- WATERHOUSE. Crural Neuritis. *Med. Mag.*, Jan. 1911, p. 35.
- F. E. BATTEN. Case of Toxic Neuritis of Doubtful Nature. (Neurol. Section.) *Proc. Roy. Soc. of Med.*, Jan. 1911, p. 20.
- RAMSAY HUNT. The Thenar and Hypothenar Types of Neural Atrophy of the Hand. *Amer. Journ. Med. Sc.*, Feb. 1911, p. 224.
- VIGNOLO-LUTATI. Beitrag zur Recklinghausenschen Krankheit. *Monatsh. f. prakt. Dermatol.*, No. 2, 1911, S. 51.
- RAVOGLI. Fibroma Molluscum, or Universal Neurofibromatosis. *Journ. Cut. Dis.*, Feb. 1911, p. 71.
- FERNET. Sur l'herpès de la peau et des membranes muqueuses. Paris: Charpentier, 1910.

SPINAL CORD—

- BABINSKI. Paraplégie Spasmodique organique avec contracture en flexion et contractions musculaires involontaires. (Soc. de neurol.) *Rev. Neurol.*, jan. 30, 1911, p. 132.
- WARRINGTON. A Case of Lymphadenoma terminating in Paraplegia. *Liverpool Med.-Chir. Journ.*, Jan. 1911, p. 53.
- G. D'ABUNDO. Su d'un altro caso di ferita del midollo spinale. *Riv. ital. di Neuropatol.*, gen. 1911, p. 1.
- ANDRÉ THOMAS. Atrophie musculaire progressive à marche lente chez une enfant de six ans. (Soc. de neurol.) *Rev. Neurol.*, jan. 30, 1911, p. 136.
- Tabes Dorsalis.**—MORITZ. Neuere Arbeiten über Tabes dorsalis. *Schmidt's Jahrb.*, H. 1, 1911, S. 1.
- ESHNER. A Case of Tabes Dorsalis without Ataxia. *Journ. Amer. Med. Assoc.*, No. 3, 1911, p. 194.

BILLINGS. Locomotor Ataxia and the Result of Specific Treatment. *Cleveland Med. Journ.*, Jan. 1911, p. 35.

STRASSER. Quecksilberbehandlung bei Tabes dorsalis. *Wien. med. Wchnschr.*, Nr. 6, 1911, S. 374.

Amyotrophic Lateral Sclerosis.—GELMA et STROËHLIN. Sclérose Latérale Amyotrophique post-traumatique. (Soc. de neurol.) *Rev. Neurol.*, jan. 30, 1911, p. 128.

Poliomyelitis Anterior Acuta.—LEVADITI. Recent Epidemiological and Experimental Researches on Infantile Paralysis. *Journ. Roy. Instit. of Public Health*, Jan. and Feb. 1911.

M. et MME. TINEL. Les lésions de la poliomyélite épidémique. *L'Encéphale*, fév. 10, 1911, p. 127.

MORSE. Acute Poliomyeloencephalitis (Infantile Paralysis). *Boston Med. and Surg. Journ.*, Jan. 12, 1911, p. 41.

GAUJOUX. De l'authenticité des épidémies récentes de paralysie infantile. *Gaz. des hôp.*, Nos. 5 et 8, 1911, pp. 61, 109.

DELHERM et LAQUERRIERE. Les aperçus nouveaux sur la paralysie infantile envisagée au point de vue électrique. *Gaz. des hôp.*, No. 3, 1911, p. 33.

TOM A. WILLIAMS. Treatment of the Pains of Acute Anterior Poliomyelitis. *Journ. Amer. Med. Assoc.*, No. 3, 1911, p. 192.

HERNAMAN-JOHNSON. The Treatment of the Chronic Stage of Infantile Spinal Paralysis in General Practice. *Med. Press*, Feb. 1, 1911, p. 112.

PAUL. The Treatment of Acute Poliomyelitis. *Boston Med. and Surg. Journ.*, Jan. 12, 1911, p. 46.

Landry's Paralysis.—COYON et BABONNEIX. Un cas de paralysie ascendante aiguë chez un enfant de onze ans. *Gaz. des hôp.*, No. 16, 1911, p. 219.

Disseminated Sclerosis.—MERLE et PASTINE. Lésions épendymaires et sous-épendymaires dans la Sclérose en Plaques. *Nouv. Icon. de la Salpêtrière*, nov.-déc. 1910, p. 613.

Tumours.—FLATAU. Tumeurs de la moelle épinière et de la colonne vertébrale. *Nouv. Icon. de la Salpêtrière*, No. 5, 1910, p. 590.

Syringomyelia.—A. R. ALLAN. Disturbance of Sensation in a Case of Syringomyelia. *Journ. Nerv. and Ment. Dis.*, Jan. 1911, p. 27.

Hæmatomyelia.—LAQUER und VOGT. Beitrag zur Klinik und Anatomie der traumatischen Hæmatomyelie. *Monatsschr. f. Psychiat. u. Neurol.*, H. 1, 1911, S. 33.

Cerebro-spinal Fluid.—BYBEE and LORENZ. Fifty Examinations of Cerebro-spinal Fluid, with Special Reference to the Cell-Count. *Arch. Intern. Med.*, Jan. 1911, p. 38.

SZECSI. Beiträge zu der zytologischen Untersuchung der Lumbalflüssigkeit. *Monatsschr. f. Psychiat. u. Neurol.*, H. 1, 1911, S. 76.

CASSIDY and PAGE. A Method for Determining the Absolute Pressure of the Cerebro-spinal Fluid. (Clin. Section.) *Proc. Roy. Soc. of Med.*, Jan. 1911, p. 56.

STUHMER. Typhusbazillen in der Cerebrospinalflüssigkeit. *Münch. med. Wchnschr.*, Nr. 7, 1911, S. 357.

BRAIN—

GUTTMANN. Die Gehirnpunktion. *Internat. Zentralbl. f. Ohrenheilk.*, Bd. 9, H. 3, 1910, S. 93.

WARRINGTON. The After Later Effects of Head Injuries. *Med. Chron.*, Feb. 1911, p. 273.

Meningitis.—BIBER. Ueber Hämorrhagien und Gefäßveränderungen bei tuberkulöser Meningitis. *Frankf. Ztschr. f. Pathol.*, Bd. 6, H. 2, S. 262.

MUCK. Beitrag zur Kenntnis der otogenen Meningitis serosa. *Ztschr. f. Ohrenheilk.*, Bd. 62, H. 2-3, 1910, S. 221.

MIRIEL. La méningite syphilitique aiguë. *Gaz. des hôp.*, No. 2, 1911, p. 15.

BING. Die Meningitis cystica serosa der hinteren Schädelgrube. *Med. Klinik*, Nr. 6, 1911, S. 227.

SCHEPELMANN. Genickstarre und Heilserum. *Wien. klin. Wchnschr.*, Nr. 4, 1911, S. 118.

BENEDICT. Cerebro-spinal Meningitis. *Journ. Amer. Med. Assoc.*, No. 5, 1911, p. 346.

NORTHROP. New Reflex Sign in Meningitis Diagnosis. *Journ. Amer. Med. Assoc.*, No. 2, 1911, p. 114.

- Thrombosis.**—WYLLIE. Meningitis, Sinus Thrombosis, and Abscess of the Brain. London: H. K. Lewis, 1911. 6s. 6d.
- Bulbar Paralysis.**—PRENTICE. Case of Syringo-bulbia. (Neurol. Section.) *Proc. Roy. Soc. of Med.*, Jan. 1911, p. 25.
- T. GRAINGER STEWART. A Case of Pseudo-bulbar Paralysis of Doubtful Origin. (Neurol. Section.) *Proc. Roy. Soc. of Med.*, Jan. 1911, p. 23.
- Embolus.**—HIPPEL. Zur Symptomatologie der GehirneMBOLIE. *Med. Klinik*, Nr. 4, 1911, S. 132.
- Encephalitis.**—CONSTANTINI. Contributo allo studio della polioencefalite acuta emorragica superiore. *Riv. Speriment. di Freniat.*, 1910, Vol. xxxvi., p. 915.
- Abscess.**—RISCHE. Ein erfolgreich operierten Hirnabszess nach Stirnhöhlen-erkrankung. *Ztschr. f. Ohrenheilk.*, Bd. 62, H. 2-3, 1910, S. 231.
- Tumours.**—STRADA. Beiträge zur Kenntnis der Geschwülste der Hypophyse und der Hypophysengegend. *Virchow's Arch.*, Bd. 203, H. 1, S. 1.
- JOHN HAY. Case of Tumour of the Hypophysis Cerebri. *Liverpool Med.-Chir. Journ.*, Jan. 1911, p. 57.
- FRICK. Ein Fall von Cholesteatom im IV. Ventrikel. *Frankf. Ztschr. f. Pathol.*, Bd. 6, H. 2, S. 207.
- HENSCHEN. Ueber Geschwülste der hinteren Schädelgrube. Jena: Fischer, 1910.
- BALLANCE. Case of Gumma of Brain. (Clin. Section.) *Proc. Roy. Soc. of Med.*, Jan. 1911, p. 47.
- R. T. WILLIAMSON. Cerebral Tumour affecting the Under Surface of the Corpus Callosum and filling the Right Ventricle. *Lancet*, Jan. 28, 1911, p. 222.
- CLAUDE et BAUDOUIN. Un cas de Pseudo-tumeur Cérébrale. Valeur des signes dits: "de localisation." (Soc. de neurol.) *Rev. Neurol.*, Jan. 30, 1911, p. 122.
- Disorders of Speech.**—GIANNULI. Sull' Afasia Motoria. *Riv. Speriment. di Freniat.*, 1910, Vol. xxxvi., p. 841.
- MINGAZZINI. Contribution clinique et anatomo-pathologique de l'aphasie chez les gauchers. *Nouv. Icon. de la Salpêtrière*, No. 5, 1910, p. 493.
- CLAUDE. L'apraxie. *Journ. des Prat.*, No. 6, 1911, p. 85.

GENERAL AND FUNCTIONAL DISEASES—

- Epilepsy.**—CHARTIER. Épilepsie avec bradycardie paroxystique d'origine cérébrale. (Soc. de Psychiat.) *L'Encéphale*, fév. 10, 1911, p. 177.
- MARCHAND. De la mort au cours de l'accès épileptique. *Gaz. des hôp.*, No. 1, 1911, p. 5.
- SHANAHAN. Some Phases of the Treatment of Epilepsy which should be given more Attention. *Diet. and Hygienic Gaz.*, Dec. 1910.
- SHANAHAN. The Care and Treatment of Epileptics. *N.Y. State Journ. of Med.*, No. 1, 1911, p. 18.
- BRATZ. Die affektepileptischen Anfälle der Neuropathen und Psychopathen. *Monatsschr. f. Psychiat. u. Neurol.*, H. 1, 1911, S. 45.
- M'DOUGALL. On the Treatment of Status Epilepticus. *Med. Chron.*, Jan. 1911, p. 224.
- Hysteria.**—ORMEROD. Presidential Address on Two Theories of Hysteria. (Neurol. Section.) *Proc. Roy. Soc. of Med.*, Jan. 1911, p. 1.
- HITSCHMANN. Freud's Neurosenlehre. Leipzig: Deuticke, 1911.
- KOSTYLEFF. Les derniers travaux de Freud et le problème de l'hystérie. (Suite et fin.) *Arch. de neurol.*, fév. 1911, p. 75.
- TOM A. WILLIAMS. Genesis of Hysterical States in Childhood, and their Relation to Fears and Obsessions. *Brit. Journ. Child. Dis.*, Feb. 1911, p. 63.
- JANET. L'Etat mental des hystériques. Les Stigmates mentaux des hystériques. Le Traitement psychologique de l'hystérie. Paris: F. Alcan, 1911. 18 fr.
- AUB. Hysterie des Mennes. München: Reinhardt, 1911. M. 2.50.
- Neurasthenia.**—WILLIAM BROWNING. Is there such a Disease as Neurasthenia? A Discussion and Classification of the many Conditions that appear to be grouped under that Head. *N.Y. State Journ. of Med.*, No. 1, 1911, p. 7.
- SWAN and SUTTER. The Organic Basis of Neurasthenia. *N.Y. Med. Journ.*, Jan. 21, 1911, p. 109.

- WARRINGTON. Neurasthenia. *Med. Chron.*, Jan. 1911, p. 263.
- HALLOCK. The Sanatorium Treatment of Neurasthenia and the Need of a Colony-Sanatorium for the Nervous Poor. *Boston Med. and Surg. Journ.*, Jan. 19, 1911, p. 73.
- METCALFE. Electricity in Neurasthenia. *Brit. Med. Journ.*, Feb. 18, 1911, p. 357.
- Paralysis Agitans.**—R. T. WILLIAMSON. Paralysis Agitans: A Review of Recent Literature. *Med. Chron.*, Jan. 1911, p. 227.
- TILNEY. Some Clinical Notes on Paralysis Agitans. *Neurographs*, Vol. I., No. 3, 1911, p. 202.
- Neuralgia.**—BAUDOUIN. Quelques considérations à propos d'un cas de Névralgie Faciale. (Soc. de neurol.) *Rev. Neurol.*, Jan. 30, 1911, p. 126.
- JANOWSKI. De la Névralgie Intercostale. (Monographies Cliniques, No. 62.) Paris: Masson et Cie, 1911. 1 fr. 25.
- Megrim.** EUGENE RIGGS. Ophthalmic Migraine. *St Paul Med. Journ.*, Jan. 1911.
- Tetany.** BUETTNER. Ein dem "Beinphänomen" der echten Tetanie in seinem klinischen Aussehen gleichender, vielleicht sichtiger als "Pseudo-Beinphänomen" zu bezeichnendes Symptom in einem Falle von Pseudotetanie hysterica. *Wien. klin. Wchnschr.*, Nr. 5, 1911, S. 162.
- SAIZ. Tetanie mit epileptiformen Anfällen und Psychose. *Berl. klin. Wchnschr.*, No. 6, 1911, S. 245.
- Exophthalmic Goitre.**—CARL KRAUS. Zur Klinik des Morbus Basedowii und seines Grenzgebietes. *Med. Klinik*, Nr. 5, 1911, S. 171.
- Alcoholism, etc.**—NEFF. Some of the Medical Problems of Alcoholism. *Boston Med. and Surg. Journ.*, Jan. 26, 1911, p. 112.
- HOLTSCHER. Alkoholismus und Nachkommenschaft. *Prag. med. Wchnschr.*, Nr. 7, 1911, S. 86.
- ROSENBERG. Ueber Delirium tremens nach Trauma. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 4, H. 2, 1911, S. 217.

SPECIAL SENSES AND CRANIAL NERVES—

- GEORGE COSTA. Anastomoses round Optic Nerve Entrance. *Ophthalm. Rec.*, Feb. 1911, p. 44.
- EDRIDGE-GREEN. Hunterian Lectures on Colour Vision and Colour Blindness. *Lancet*, Feb. 4 and 11, 1911, pp. 285, 358.
- BIHL. Totale transitorische Amaurose als Begleiterscheinungen einer Meningo-encephalitis serosa ex otitide. *Wien. med. Wchnschr.*, Nr. 6, 1911, S. 311.
- COLIN CAMPBELL. Tuberculosis of the Optic Nerve. *Canadian Practitioner*, Jan. 1911, p. 11.
- LESLIE BUCHANAN. Some Cases resembling Atrophy of the Optic Nerves which recover under Treatment. *Glasgow Med. Journ.*, Feb. 1911, p. 109.
- VAN DER HOEVE. Enlargement of the Blind Spot, an Early Symptom in the Diagnosis of Optic Nerve Affections due to Disease of the Posterior Nasal Accessory Sinuses. *Arch. of Ophthalm.*, Jan. 1911, p. 30.
- STEVENS. A Series of Studies of Nervous Affections in Relation to the Adjustments of the Eyes. *N. Y. Med. Journ.*, Jan. 28, 1911, p. 157.
- ALGER. Disturbances Dependent on Eye Strain. *Boston Med. and Surg. Journ.*, Feb. 2, 1911, p. 142.
- BUYS. Ueber die Nystagmographie beim Menschen. *Internat. Zentralbl. f. Ohrenheilk.*, Bd. 9, H. 2, 1910, S. 57.
- ROSENFELD. Beitrag zur Theorie des calorischen Nystagmus. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 4, H. 2, 1911, S. 260.
- ACHARD et FLANDIN. Spasme oculo-lévogyre chez une Épileptique. (Soc. de Neurol.) *Rev. Neurol.*, Jan. 30, 1911, p. 120.
- J. MICHELL CLARKE. The Argyll-Robertson Sign in Cerebral and Spinal Syphilis. *Brit. Med. Journ.*, Feb. 11, 1911, p. 296.
- ANDRÉ-THOMAS. Études sur les nerfs ciliaires. *Nouv. Icon. de la Salpêtrière*, No. 5, 1910, p. 562.
- J. R. PAGE. Reflex Disturbances referable to the Ear. *Boston Med. and Surg. Journ.*, Feb. 2, 1911, p. 147.

KÖRNER. Ueber bulbäre Kehlkopflähmungen. *Ztschr. f. Ohrenheilk.*, Bd. 62, H. 2-3, 1910, S. 198.

MISCELLANEOUS SYMPTOMS AND CASES—

- BABINSKI et JUMENTIÉ. Syndrome Cérébelleux unilatéral. (Soc. de neuro *Rev. Neurol.*, jan. 30, 1911, p. 115.
- LAIGNEL-LAVASTINE. Note complémentaire sur la Communication de MM. Babinski et Jumentié: Syndrome cérébelleux unilatérale. (Soc. de Neurol.) *Rev. Neurol.*, jan. 30, 1911, p. 118.
- F. E. BATTEN. Case of Progressive Cerebellar Ataxia. (Neurol. Section.) *Proc. Roy. Soc. of Med.*, Jan. 1911, p. 19.
- CLAUDE. Origine des mouvements athétosiques. *Journ. des Prat.*, No. 1, 1911, p. 8.
- TOOTH. A Lecture on Gait as an Aid to Diagnosis. *Clin. Journ.*, Jan. 18, 1911, p. 225.
- SEYMOUR TAYLOR. A Paralytic Stroke. *Clin. Journ.*, Jan. 25, 1911, p. 177.
- GAUDUCHEAU et FERRY. Un cas de Monoplégie Crurale d'origine cérébrale avec accès d'épilepsie partielle débutant par le gros orteil. (Soc. de neurol.) *Rev. Neurol.*, jan. 30, 1911, p. 129.
- RAIMISTE. Sur les mouvements associés du membre inférieur malade dans les hémiplegies organiques. *Rev. Neurol.*, jan. 30, 1911, p. 71.
- CONOS. A propos d'un cas d'hémichorée post-hémiplegique gauche, avec lésion homolatérale du noyau lenticulaire. *L'Encéphale*, fév. 10, 1911, p. 153.
- HENRY MEIGE. Convulsions de la face. Une forme clinique de convulsion faciale bilatérale et médiane. *Journ. de Neurol.*, déc. 20, 1911, p. 401.
- SOUQUES et VAUCHER. Monoplégie cérébrale durable avec anesthésie et astéréognosie passagères. *Rev. Neurol.*, jan. 15, 1911, p. 8.
- EMIL REISS. Die elektrische Entartungsreaktion. Berlin: J. Springer, 1911. M. 4.80.
- SIMONIN. La crise excito-motrice de l'alcoolisme aigu devant la justice militaire (suite). *Journ. de Neurol.*, déc. 20, 1911, p. 410.
- FOIX. Troubles sensitifs au cours de l'hémiplegie-aphasie. *Rev. Neurol.*, jan. 30, 1911, p. 61.
- TAMBURINI. Sulla sensibilità elettrica e su alcuni nuovi apparecchi per determinarne la specificità. *Riv. Speriment. di Freniat.*, 1910, Vol. xxxvi., p. 977.
- LAIGNEL-LAVASTINE. Nævus vasculaire linéaire non radiculaire. (Soc. de neurol.) *Rev. Neurol.*, jan. 30, 1911, p. 119.
- KNAPP. Notes of a Case of Hemiatrophy from Sclerodermia (Neurol. Section.) *Proc. Roy. Soc. of Med.*, Jan. 1911, p. 28.
- GEIST. Ein Fall von halbseitiger Unterentwicklung. *Neurol. Centralbl.*, Feb. 1, 1911, S. 122.
- CHEVALLIER. Brachymélie métapodiale congénitale. *Nouv. Icon. de la Salpêtrière*, No. 5 et No. 6, 1910, pp. 571, 685.
- LEVI. Contribution à la connaissance de la microsomie essentielle hérédofamiliale. Distinction de cette forme clinique d'avec les nanismes, les infantilismes et les formes mixtes de ces différentes hypertrophies. *Nouv. Icon. de la Salpêtrière*, No. 5 et No. 6, 1910, pp. 522, 660.
- HIGHBEE and ELLIS. A Case of Osteitis Deformans. *Journ. Med. Research*, Jan. 1911, p. 43.
- KIDDER. The Psychology of Tuberculosis. *N.Y. State Journ. of Med.*, No. 1, 1911, p. 17.
- TROMNER. Ueber motorische Schlafstörungen. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 4, H. 2, 1911, S. 228.
- ROUSSY et CLUNET. Etude anatomique de l'appareil thyro-parathyroïdien dans deux cas de myxodème congénital par agénésie du corps thyroïde. *Presse méd.*, No. 6, 1911, p. 50.
- RAVANT et PINOY. Actinobacillose à forme méningée observée à Paris chez un Argentin (Premier cas chez l'homme de cette affection). *Presse méd.*, No. 6, 1911, p. 49.
- CLAUDE. Equivalents comiteaux. *Journ. des Prat.*, No. 2, 1911, p. 22.
- SYDNEY SCOTT. Vertigo. *Clin. Journ.*, Jan. 25, 1911, p. 248.
- FRUGONI und GARGIONE. Eine eigentümliche Komplikation während der Pasteur'schen Schutzimpfung gegen Lyssa. *Berl. klin. Wchschr.*, Nr. 6, 1911, S. 254.

- LEOPOLD FISCHER. Ein Unfallverletzung im Schlaf infolge eines Traumes. *Med. Klinik*, Nr. 7, 1911, S. 264.
- THOMAS R. BROWN. Urinary Hyperacidity and its Relation to Neuritis, Neuralgia, and Myalgia. *Bull. Johns Hopkins Hosp.*, Jan. 1911, p. 1.
- ADAMS. The Functional Spine. *Boston Med. and Surg. Journ.*, Jan. 19, 1911, p. 80.
- SEGLAS et LOGRE. Délire hypocondriaque, torticollis mental, tics multiples. Aspect parkinsonnien. *Rev. Neurol.*, jan. 15, 1911, p. 3.
- SELETSKI. Anomalies des orteils. *Nouv. Icon. de la Salpêtrière*, nov.-déc. 1910, p. 695.
- LESZYNSKY. Reflex Symptoms and Disease of the Nervous System. *Boston Med. and Surg. Journ.*, Feb. 2, 1911, p. 150.
- MORRIS. Reflexes in Surgical Diagnosis. *Boston Med. and Surg. Journ.*, Feb. 2, 1911, p. 141.
- SOHIER BRYANT. Reflexes and Reflex Neuroses from the Upper Air Tract. *Boston Med. and Surg. Journ.*, Feb. 2, 1911, p. 144.
- FISHER. What is the Meaning of Reflex? *Boston Med. and Surg. Journ.*, Feb. 2, 1911, p. 149.
- CESANA. Lo sviluppo ontogenico degli atti riflessi. *Arch. de Fisiol.*, nov. 1910, p. 1.
- DODGE. A Systematic Exploration of a Normal Knee-jerk: its Technique, etc. *Ztschr. f. allg. Physiol.*, Bd. 12, H. 1-2, S. 1.
- ALTHOFF. Zur Auslösung des Achillessehnenreflexes. *Münch. med. Wchnschr.*, No. 2, 1911, S. 86.
- HAHN. Babinski'sches Zeichen und verwandte Erscheinungen unter Einwirkung von Hyoszin und Alkohol. *Neurol. Centralbl.*, Feb. 1 u. 15, 1911, Sn. 114, 185.
- BYROM BRAMWELL. Note on the "Crossed" Plantar Reflex. *Rev. Neurol. and Psychiat.*, Feb. 1911, p. 49.

PSYCHIATRY

- BACCELLI. La siero-diagnosi di Wassermann nella paralisi progressiva e nelle sindromi paralitiformi. *Riv. Speriment. di Freniat.*, 1910, Vol. xxxvi., p. 949.
- BACCELLI e TERNI. L'Indice opsonico in alcuni malati di mente. *Riv. di Patol. nerv. e ment.*, gen. 1911, p. 24.
- GRAZIANI. Ricerche sulle modificazioni citologiche del sangue nelle principali psicosi. *Riv. Speriment. di Freniat.*, 1910, Vol. xxxvi., p. 878.
- ROUBINOVITCH et PAILLARD. Le liquide céphalo-rachidien dans les maladies mentales. *Gaz. des hôp.*, No. 17, 1911, p. 237.
- MOTT. Heredity and Insanity. *Eugenics Rev.*, Jan. 1911, p. 257.
- A. R. DOUGLAS. The Ament: His Position in the Community and his Influence on the Future of the Race. *Practitioner*, Feb. 1911, p. 310.
- PILCZ. Klinik der arteriosklerotischen Geistesstörungen. *Wien. med. Wchnschr.*, Nr. 5, 6 u. 7, 1911, Sn. 306, 382, 443.
- PERRENS. Hallucinations volontaires de la Vue. *L'Encéphale*, fév. 10, 1911, p. 161.
- MONDIO. La confusione mentale traumatica. *Riv. ital. di Neuropatol.*, gen. 1911, p. 10.
- DUPRÉ et DEVAUX. La mélancolie du peintre Hugo e van der Goes. *Nouv. Icon. de la Salpêtrière*, No. 5, 1910, p. 605.
- DUPRÉ et DEVAUX. La mélancolie du peintre Hugo Vandergoes. *Journ. de Neurol.*, jan. 20, 1911, p. 21.
- ZIVERI. Psicosi ansiosa confusa infausta di Wernicke-Kraepelin? *Riv. Speriment. di Freniat.*, 1910, Vol. xxxvi., p. 819.
- DANTHEVILLE. Le "Cafard" ou Psychose des pays chauds. *Arch. d'Anthrop. Crim.*, Jan. 15, 1911.
- GAUTER. Ueber Lebens- und Krankheitsdauer bei Geisteskranken und einige verwandte Fragen. *Allg. Ztschr. f. Psychiat.*, Bd. 86, H. 1, 1911, S. 104.
- HINRICHSSEN. Beitrag zur Kenntnis des epileptischen Irreseins. *Allg. Ztschr. f. Psychiat.*, Bd. 86, H. 1, 1911, S. 22.
- NÄCKE. Einfluss von Schwangerschaft, Geburt und Wochenbett auf den Verlauf einer vorher schon bestehenden chronischen Psychose. *Allg. Ztschr. f. Psychiat.*, Bd. 86, H. 1, 1911, S. 1.
- NEFF. Institutional Forms of Manic-Depressive Insanity. *Boston Med. and Surg. Journ.*, Jan. 19, 1911, p. 81.

- WALLON. Psychose circulaire ayant débuté à douze ans chez une fillette intellectuellement débile. (Soc. de psychiat.) *L'Encéphale*, fév. 10, 1911, p. 171.
- RÉMOND et VOIVENEL. Essai sur le rôle de la ménopause en pathologie mentale. *L'Encéphale*, fév. 10, 1911, p. 113.
- BONGARS de VAUDELEAU. Maladies mentales professionnelles. (Thèse.) Toulouse: Mollat, 1910.
- ROBERT M. ELLIOTT. The Psychology of "Princess Olivia." *Neurographs*, Vol. i., No. 3, 1911, p. 165.
- ROSSI. La "Paranoia." Osservazioni cliniche e critica diagnostica. *Ann. di Neurol.*, Anno 28, f. 5, 1910, p. 257.
- SCHROEDER. Entwicklungsstörungen des Gehirns bei Dementia praecox. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 4, H. 2, 1911, S. 194.
- A. MARIE. Faits relatifs à l'étude anatomo-clinique des hallucinations latéralisées. *Arch. de Neurol.*, fév. 1911, p. 86.
- HALBERSTADT. Hallucinations lilliputiennes dans un cas de démence précoce au début. *Arch. de Neurol.*, fév. 1911, p. 69.
- SÉGLAS et COLLIN. Émotion-choc. Psychose confusionnelle. *Presse méd.*, No. 9, 1911, p. 81.
- RÉMOND et VOIVENEL. Considérations sur la criminalité infantile. *Prog. méd.*, No. 7, 1911, p. 82.
- PEL. Eine Tabakpsychose bei einem 13 jährigen Knaben. *Berl. klin. Wchnschr.*, Nr. 6., 1911, S. 241.
- MEEHAN. An Interesting Case of Confusional Insanity. *Journ. Amer. Med. Assoc.*, No. 3, 1911, p. 179.
- BULLARD. Mongolian Idiocy. *Boston Med. and Surg. Journ.*, Jan. 12, 1911, p. 56.
- NOUËT. La presbyophrénie de Wernicke et les psychopolynévrites. *L'Encéphale* fév. 10, 1911, p. 141.
- JELLIFFE. Predementia Praecox: the Hereditary and Constitutional Features of the Dementia Praecox Make-up. *Journ. Nerv. and Ment. Dis.*, Jan., 1911, p. 1.
- CASCELLA. Le parestesie nella genesi del delirio di persecuzione fisica del dementi precoci. *Ann. di Neurol.*, Anno 28, f. 5, 1910, p. 311.
- BECKER. Die medikamentöse Behandlung des Geisteskrankheiten. *Fortschr. d. Med.*, Nr. 4-5, 1911, Sn. 73, 103.
- GUIDI. Della dementia praecocissima. *Riv. Speriment. di Freniat.*, 1910, Vol. xxxvi., p. 831.
- DEJERINE et GAUCKLER. Les Manifestations fonctionnelles des Psychonévroses: Leur Traitement par la Psychothérapie. Paris: Masson et Cie, 1911. 8 fr.
- TH. SIMON. L'Aliéné, l'Asile, l'Infirmier. Paris: O. Berthier, 1911. 4 fr.
- TOMASCHNY. Über die Anwendung des Pantopon in der Psychiatrie. *Neurol. Centralbl.*, Feb. 1, 1911, S. 127.
- TUCKER. Pellagra, with Analytical Study of 55 Non-Institutional or Sporadic Cases. *Journ. Amer. Med. Assoc.*, No. 4, 1911, p. 246.
- VOIVENEL et FONTAINE. Notes sur 20 cas de pellagre observés dans les asiles d'Auch (Cers) et de Saint-Lizier (Ariège). *Journ. de Neurol.*, jan. 5, 1911, p. 1.
- KIRCHHOFF. Ist die Paralyse eine moderne Krankheit? *Allg. Ztschr. f. Psychiat.*, Bd. 86, H. 1, 1911, S. 125.
- LARBÉ et GALLAIS. Les échanges urinaires chez quelques paralytiques généraux. *Presse méd.*, No. 4, 1911, p. 26.
- CHARPENTIER et BARBÉ. Trois cas de paralysie générale de longue durée. (Soc. de Psychiat.) *L'Encéphale*, fév. 10, 1911, p. 168.

TREATMENT *

- ARONSOHN. Zur Psychologie und Therapie des Stotterns. *Berl. klin. Wchnschr.*, Nr. 4, 1911, S. 170.
- PILCZ. Ueber neuere Fortschritte in der Therapie der Nerven- und Geisteskrankheiten. *Med. Klinik*, Nr. 5, 1911, S. 165.

* A number of references to papers on Treatment are included in the Bibliography under individual diseases.

- KLINGMANN. The Future of Psychotherapy. *Med. Rec.*, Jan. 14, 1911, p. 58.
- EDWIN ASH. Hypnotism in Relation to Surgical Anæsthesia. (Section of Anæsthetics.) *Proc. Roy. Soc. of Med.*, Jan. 1911, p. 13.
- HENRI MEIGE. Comment concevoir l'hypnotisme. Ses applications thérapeutiques et médico-légales d'après J. Babinski. *Rev. Neurol.*, Jan. 15, 1911, p. 12.
- DEJERINE et GAUCKLER. Les Manifestations fonctionnelles des Psychonévroses. Leur traitement par la Psychothérapie. Paris: Masson et Cie, 1911. 8 fr.
- RIECK. Ueber Hypnose. Bemerkungen zu dem Aufsatz des Herrn Prof. Dr Koch's "Suggestionnarkose und Hypnose." *Zentralbl. f. Gynäk.*, Nr. 6, 1911, S. 237.
- THEODORE DILLER. Symptoms Suggestive of Brain Tumour relieved by the Correction of a Refractive Error. *Journ. Amer. Med. Assoc.*, No. 5, 1911, p. 347.
- DEES. Arbeitstherapie. *Allg. Ztschr. f. Psychiat.*, Bd. 86, H. 1, 1911, S. 116.
- SIGALIN. Atmungsgymnastik auf psychischer Basis. *D. med. Wchschr.*, Nr. 7, 1911, S. 308.
- TRANGOTT. Erfahrung mit einem neuen Hypnoticum (Adalin). *Berl. klin. Wchschr.*, Nr. 7, 1911, S. 300.
- SCHROEDER. Zur Behandlung der Morphinisten. *Berl. klin. Wchschr.*, Nr. 7, 1911, S. 281.
- KLEINEBERGER. Die Behandlung der progressiven Paralyse mit Natrium nucleinicum. *Berl. klin. Wchschr.*, Nr. 8, 1911, S. 330.
- V. F. BLAIR. Notes on Cases of Trifacial Neuralgia treated by Deep Injections. *Journ. Amer. Med. Assoc.*, No. 5, 1911, p. 335.
- SCHERSCHMIDT. Zur Behandlung der Schlafkrankheit mit Arsenophenylglyzin. *D. med. Wchschr.*, Nr. 7, 1911, S. 292.
- A. E. TAYLOR. The Treatment of Exophthalmic Goitre with Specific Subserum. *Journ. Amer. Med. Assoc.*, No. 4, 1911, p. 263.
- CROTHERS. Inebriety: Its Treatment and Curability. *Med. Rec.*, Jan. 28, 1911, p. 152.
- SEGNEIRA. Notes on Cases of Hereditary Syphilis treated by Ehrlich-Hata's "606." *Brit. Journ. Child. Dis.*, Feb. 1911, p. 49.
- MARINESCO. Sur quelques résultats obtenus par le "606" dans le traitement des maladies nerveuses. *Presse méd.*, No. 8, 1911, p. 65.
- MARCUS. Die Ehrlich-Hata-Behandlung bei syphilitischen Erkrankungen des Nervensystems. *Munch. med. Wchschr.*, Nr. 2, 1911, S. 76.
- CLEVELAND. The Operative Treatment of Tuberculous Meningitis. *Med. Press*, Jan. 25, 1911, p. 83.
- KRAUSE. Die Geschwulste des Gehirns und des Rückenmarks mit ihren Operationen. *Ztschr. f. Krebsforsch.*, Bd. 10, H. 1, S. 108.
- BORNKAUPT. Durchschneidung der hinteren Rückenmarkswurzeln bei spastische Lähmungen (Forstnersche Operation.) *St. Peter's med. Wchschr.*, Nr. 3, 1911.

Bibliography

ANATOMY

- J. H. W. RHEIN. An Anatomic Study of the Fasciculus Occipito-frontalis and the Tapetum. *Journ. Nerv. and Ment. Dis.*, Feb. 1911, p. 65.
- LÖWENSTEIN. Zur Kenntnis der Faserung des Hinterhaupt- und Schläfenlappens (Sehstrahlung, unteres Längsbündel, Türcksches Bündel) nebst klinischen Bemerkungen über Tumoren des rechten Schläfenlappens. *Arb. a. d. hirnanat. Instit. in Zürich*, H. 5, 1911.
- SPIELMEYER. Technik der mikroskopischen Untersuchung des Nervensystems. Berlin: J. Springer, 1911. M. 4.
- LUNA. Ricerche istologiche supra un nucleo riscontrato nel Rombo-encefalo di *Sus scropha*. Contributo alla conoscenza della cellula nervosa. *Folio neuro-biol.*, Nr. 1, 1911, S. 31.
- BOROWIECKI. Vergleichend-anatomische und experimentelle Untersuchungen über das Brückengrau und die wichtigsten Verbindungen der Brücke. *Arb. a. d. hirnanat. Instit. in Zürich*, H. 5, 1911.
- RONDONI. Considerazioni sopra il lavoro del prof. Roncoroni "Ricerche sulla citoarchitettura corticale." *Riv. di Patol. nerv. e ment.*, Feb. 1911, p. 100.
- RONCORONI. Risposta alla nota del dott. P. Rondoni. *Ibid.*, p. 103.
- ACHÚCARRO. Cellules allongées et Stäbchenzellen, cellules névrogliques et cellules granulo-adipeuses à la corne d'Ammon du lapin. *Trab. del Lab. de Investig. Biol. de Madrid*, T. vii., p. 201.
- S. R. CAJAL. Contribución al estudio de los ganglios de la substancia reticular del bulbo, con algunos detalles concernientes á los focos motores y vias reflejas bulbares y mesocefálicas. *Trab. del Lab. de Investig. Biol. de Madrid*, T. vii., p. 259.
- NAGEOTTE. Les Étranglements de Ravvier et les espaces interannulaires des fibres nerveuses à myéline. *Compt. rend. de l'Assoc. des Anatomistes, Bruxelles*, 1910.
- WILDER. Exhibition of, and Preliminary Note upon, a Brain of about One-half the Average Size from a White Man of Ordinary Weight and Intelligence. *Journ. Nerv. and Ment. Dis.*, Feb. 1911, p. 95.
- S. R. CAJAL. Nota sobre la estructura de la retina de la mosca (*M. vomitoria* L.). *Trab. del Lab. de Investig. Biol. de Madrid*, T. vii., p. 217.
- SANCHEZ. El sistema nervioso de los hirudíneos. *Trab. del Lab. de Investig. Biol. de Madrid*, T. vii., p. 31.
- F. TELLO. Contribucion al conocimiento del encéfalo de los teleósteos. I. Los núcleos bulbares. *Trab. del Lab. de Investig. Biol. de Madrid*, T. vii., p. 1.

PHYSIOLOGY

- C. v. MONAKOW. Neue Gesichtspunkte in der Frage nach der Lokalisation in Grosshirn. Wiesbaden: J. F. Bergmann, 1911. 1s. 6d.
- MONAKOW. Aufbau und Lokalisation der Bewegungen beim Menschen. *Arb. a. d. hirnanat. Instit. in Zürich*, H. 5, 1911.
- SCHÄFER. Die Funktionen des Gehirnanhanges (Hypophysis Cerebri). Bern: Drechsel, 1911. M. 1.20.
- DUSSER de BARENNE. Die Strychninwirkung auf das Zentralnervensystem. *Folio neuro-biol.*, Nr. 1, 1911, S. 42.
- MICHAÏLOW. Die Nerven des Myokardiums und experimentelle Untersuchungen an vagotomirten Tiere. *Folio neuro-biol.*, Nr. 1, 1911, S. 1.

- SPITZER. Ueber die Kreuzung der centralen Nervenbahnen und ihre Beziehungen zur Phylogenese des Wirbelkörpers. Wien: Deuticke, 1910.
- JOLLY. On the Time Relations of the Knee-jerk and Simple Reflexes. *Quart. Journ. Experiment. Physiol.*, Vol. iv., Nr. 1, 1911, p. 67.
- PIERONI. Ueber Vasodilatoren im Ischiadikus des Frosches. *Zentralbl. f. Physiol.*, Nr. 24, 1911, S. 1099.
- GRAHAM BROWN. On the Relation between Maintained Contraction and Rhythmic Discontinuous Inhibition. *Quart. Journ. Experiment. Physiol.*, Vol. iv., No. 1, 1911, p. 19.
- BURTON-OPITZ and LUCAS. The Blood Supply of the Kidney. V. The Influence of the Vagus Nerve upon the Vascularity of the Left Organ. *Journ. Exper. Med.*, March 1911, p. 308.

PSYCHOLOGY

- HELLER. Psychologie und Psychopathologie des Kindes. 4 Vorträge. Wien: Heller & Co., 1911. M. 1.25.
- PASCAL. La Conscience psychologique. Paris, 10, rue Saint-Lazare, 1911. 3 fr.
- PADOVANI. Della fortuna di W. James in Europa. *Rassegna di Studi Psichiat.*, Vol. i., f. i., 1911, p. 44.
- G. R. JEFFREY. On the Mechanism of Mental Processes, with Special Reference to Emotional Control. *Journ. Ment. Sc.*, Jan. 1911, p. 85.
- BLEULER. Die Psychoanalyse Freuds. Verteidigung und kritische Bemerkungen. Wien: F. Deuticke, 1911. M. 2.50.
- MORTON PRINCE. The Mechanism and Interpretation of Dreams. A Reply to Dr Ernest Jones. *Journ. Abnorm. Psychol.*, Feb.-March 1911, p. 337.
- ERNEST JONES. Remarks on Dr Morton Prince's Article, "The Mechanism and Interpretation of Dreams." *Journ. Abnorm. Psychol.*, Feb.-March 1911, p. 328.
- PIÉRON. L'évolution de la mémoire. Paris: Flammarion, 1910.
- BETHGE. Der Einfluss geistiger Arbeit auf den Körper unter besond. Berücksichtigung der Ermüdungserscheinungen. Halle: Marhold, 1910. M. 1.20.
- LESAGE et COLLIN. Sur la résistance à la fatigue de l'enfant de deux à trois ans. (Soc. de Psychiat.) *L'Encéphale*, No. 3, 1911, p. 268.
- BERZE. Zur Psychologie und Pathologie der Affektion. *Wien. klin. Wchsch.*, Nr. 9, 1911, S. 299.
- PICK. Les troubles psychopathiques des modes de l'expression (langage et écriture). *Arch. de Neurol.*, mars 1911, p. 137.
- STERNBERG. Die physiologische Grundlage des Hungergefühls. *Ztschr. f. Sinnesphysiol.*, Abt. II., Bd. 45, H. 2, 1911, S. 71.
- MARX und TRENDELENBURG. Ueber die Genauigkeit der Einstellung des Auges beim Fixieren. *Ztschr. f. Sinnesphysiol.*, Abt. II., Bd. 45, H. 2, 1911, S. 87.
- MINKOWSKI. Zur Müllerschen Lehre von den spezifischen Sinnesenergien. *Ztschr. f. Sinnesphysiol.*, Abt. II., Bd. 45, H. 2, 1911, S. 129.
- LIEBERMANN und MARX. Ueber die Empfindlichkeit des normalen und des protanopischen Sehorgans für Unterschiede des Farbentons. *Ztschr. f. Sinnesphysiol.*, Abt. II., Bd. 45, H. 2, 1911, S. 103.
- LIEBERMANN. Verschmelzungsfrequenzen von Farbenpaaren. *Ztschr. f. Sinnesphysiol.*, Abt. II., Bd. 45, H. 2, 1911, S. 117.
- SCHUBOTZ. Beiträge zur Kenntnis des Sehraumes auf Grund der Erfahrung. *Arch. f. d. ges. Psychol.*, Bd. 20, H. 2, 1911, S. 101.
- SCHLESINGER. Die Methode der historisch-völkerpsychologischen Begriffsanalyse. *Arch. f. d. ges. Psychol.*, Bd. 20, H. 2, 1911, S. 150.
- BETZ. Vorstellung und Einstellung. II. Ueber Begriffe. *Arch. f. d. ges. Psychol.*, Bd. 20, H. 2, 1911, S. 186.
- TASTEVIN. L'asthénie post-douloureuse et les dysthénies périodiques (psychose périodique). *Ann. Méd.-Psychol.*, No. 2, 1911, p. 177.

PATHOLOGY

- BAYER und PETER. Zur Kenntnis des Neurochemismus der Hypophyse. *Arch. f. experiment. Pathol.*, Bd. 64, H. 3-4, 1911, S. 204.
- SCHRABER. Die Bedeutung der sog. Marchi-Reaktion der Markscheiden nach Untersuchungen am Sehnerven. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 4, H. 3, 1911, S. 386.

- ACHÚCARRO. Sur certaines lésions en forme de plaques siégeant à l'épendyme des ventricules latéraux. *Trab. del Lab. de Investig. Biol. de Madrid*, T. vii., p. 189.
- A. NINIAN BRUCE. The Muscle Spindles in Pseudo-Hypertrophic Paralysis. *Rev. Neurol. and Psychiat.*, March 1911, p. 110.
- F. W. MOTT. Note upon the Examination, with Negative Results, of the Central Nervous System in a Case of Cured Human Trypanosomiasis. *Lancet*, Feb. 25, 1911, p. 500.
- BENIGNI. Sulle alterazioni anatomiche indotte dall'intossicazione cronica sperimentale da tabacco. *Riv. di Patol. nerv. e ment.*, Feb. 1911, p. 80.
- CHIARI und FRÖHLICH. Erregbarkeitsänderung des vegetativen Nervensystems durch Kalkentziehung. *Arch. f. experiment. Pathol.*, Bd. 64, H. 3-4, 1911, S. 204.

CLINICAL NEUROLOGY

GENERAL—

- JENDRASSIK. Die hereditären Krankheiten. *Handbuch der Neurologie*, Bd. 2, 1911, S. 321.
- PEARCE BAILEY. The Aims and Possibilities of Neurological Hospitals. *Boston Med. and Surg. Journ.*, Feb. 16, 1911, p. 215.
- KNAPP. The New Neurological Service at the Boston City Hospital: Its First Year's Work. *Boston Med. and Surg. Journ.*, Feb. 16, 1911, p. 218.
- ALZHEIMER. Ueber eigenartigen Krankheitsfälle des späteren Alters. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 4, H. 3, 1911, S. 356.
- HOBHOUSE. Nervous Affections of Childhood in Relation to General Disease. *Journ. Roy. Sanit. Instit.*, March 1911, p. 153.
- G. J. JONES. Chronic Influenza and its Relation to Neuropathy. *Amer. Journ. Med. Sc.*, Feb. 1911, p. 267.
- KNOTT. Phrenology and its Founder: The Claims of Franz Joseph Gall on the Homage of Scientific Posterity. *N.Y. Med. Journ.*, March 4 and 11, 1911, pp. 418, 470.

MUSCLES—

- HIRSCHFELD. Kongenitale Muskeldefekte. *Handbuch der Neurologie*, Bd. 2, 1911, S. 248.
- CASSIRER. Myatonia congenita. *Handbuch der Neurologie*, Bd. 2, 1911, S. 230.
- PEMBERTON. A Metabolic Study of Myotonia Atrophica. *Amer. Journ. Med. Sc.*, Feb. 1911, p. 253.
- LEWANDOWSKY. Die Myasthenie. *Handbuch der Neurologie*, Bd. 2, 1911, S. 210.
- ROUSSY et ROSSI. Un cas de myasthénie grave progressive d'Erb-Goldflam. *Rev. Neurol.*, fév. 15, 1911, p. 149.
- MOORHEAD. Notes on a Case of Myasthenia Gravis. *Dublin Journ. Med. Sc.*, March 1911, p. 161.
- HUET et BAUDOUIN. Obstruction intestinale chez les Myopathiques. Utilité du lavement électrique. (Soc. de neurol.) *Rev. Neurol.*, No. 4, 1911, p. 273.
- CLAUDE. Dystrophies musculaires du type Neuritico-spinal et du type Myopathique avec Syndromes pluriglandulaires. (Soc. de neurol.) *Rev. Neurol.*, No. 4, 1911, p. 257.
- WERTHEIM - SALOMONSON. Myositis. *Handbuch der Neurologie*, Bd. 2, 1911, S. 149.

NERVES—

- FRANZ KRAMER. Nervenverletzungen. *Handbuch der Neurologie*, Bd. 2, 1911, S. 161.
- WERTHEIM - SALOMONSON. Neuritis und Polyneuritis. *Handbuch der Neurologie*, Bd. 2, 1911, S. 51.
- BARBEZIEUX. Considérations sur le béri-béri. Pathogénie et traitement. *Rev. de Med.*, No. 2, 1911, p. 81.
- WERTHEIM-SALOMONSON. Nervengeschwülste. *Handbuch der Neurologie*, Bd. 2, 1911, S. 200.
- TRIMBLE. Remarks on Neurofibromatosis. *N.Y. Med. Journ.*, Feb. 25, 1911, p. 358.
- GLIMM. Zur Behandlung der Ischias mit epiduralen Injektionen. *Münch. med. Wchnschr.*, No. 8, 1911, S. 403.

- SOUQUES et HUET. Paralyse Radiale par section complète du Nerve radial, retour de la Motilité après suture tardive du Nerve. (Soc. de neurol.) *Rev. Neurol.*, No. 4, 1911, p. 252.
- TINEL. Un cas de Sciatique-zona. (Soc. de neurol.) *Rev. Neurol.*, No. 4, 1911, p. 259.
- MILLER. Meralgia Paresthetica due to Pressure of the Corset. *Arch. Intern. Med.*, Feb. 15, 1911, p. 182.

SPINAL CORD—

- Tabes Dorsalis.**—SCHAEFFER. Tabes dorsalis. *Handbuch der Neurologie*, Bd. 2, 1911, S. 959.
- CLAUDE. Spécificité et tabes. *Journ. des Prat.*, Nr. 8, 1911, p. 117.
- TINEL. Méningites et tabes. *Presse méd.*, No. 16, 1911, p. 137.
- WALTER GILMOUR. The Wassermann Reaction: A More Reliable Technique. *Journ. Ment. Sc.*, Jan. 1911, p. 28.
- FERRY et GAUDUCHEAU. Sur un cas d'Ataxie locomotrice chez un sujet jeune. (Soc. de neurol.) *Rev. Neurol.*, No. 4, 1911, p. 251.
- BARRE. Arthropathie à type Tabétique, de la hanche, chez un Syphilitique non tabétique. (Soc. de neurol.) *Rev. Neurol.*, No. 4, 1911, p. 262.
- ELSCHNIG. Ueber tabische Sehnervenatrophie. *Med. Klinik*, Nr. 9, 1911, S. 327.
- FINDEK. Rekurrenzlähmung bei Tabes und gleichzeitigem Aortenaneurysma. *Arch. f. Laryngol.*, Bd. 24, H. 2, 1911, S. 312.
- STANGE und BRUSTEIN. Ueber Temperaturkrisen bei Tabikern. *Berl. klin. Wchnschr.*, No. 12, 1911, S. 527.
- WEISS. Ueber die Beziehung der Muskelempfindung zur tabischen Ataxie. *Wien. med. Wchnschr.*, Nr. 10, 1911.
- Amyotrophic Lateral Sclerosis.**—OTTO MARBURG. Die chronisch progressiven nuclearen Amyotrophien. Die amyotrophische Lateralsklerose. *Handbuch der Neurologie*, Bd. 2, 1911, S. 278.
- GUCCIONE. Sopra un caso di amiotrofia mielogenica progressiva. *Riv. di Patol. nerv. e ment.*, Feb. 1911, p. 65.
- Poliomyelitis Anterior Acuta.**—FEISS. Address on Infantile Paralysis. *Cleveland Med. Journ.*, Feb. 1911, p. 119.
- VIPOND. Etiology of Poliomyelitis. *Brit. Med. Journ.*, March 18, 1911, p. 612.
- GARROW. Are Poliomyelitis and Herpes Zoster the same Disease? *Brit. Med. Journ.*, March 18, 1911, p. 621.
- LEVADITI. The Recent Epidemiological and Experimental Researches on Infantile Paralysis. *Journ. Roy. Instit. of Public Health*, March 1911, p. 129.
- LANCET. Récentes publications sur la paralysie infantile épidémique. *Gaz. des Hôp.*, No. 21, 1911, p. 304.
- FLEXNER and CLARK. Experimental Poliomyelitis in Monkeys. Ninth Note. Immunity Principles, etc. *Journ. Amer. Med. Assoc.*, Feb. 25, 1911, p. 535.
- ANDERSON and FROST. Abortive Cases of Poliomyelitis. *Journ. Amer. Med. Assoc.*, March 4, 1911, p. 663.
- FRISSELL. Report of a Case of Epidemic Anterior Poliomyelitis. *Journ. Amer. Med. Assoc.*, March 4, 1911, p. 661.
- EDWARD MAYER. Epidemic Poliomyelitis. *Med. Rec.*, Feb. 18, 1911, p. 299.
- PARKER. An Epidemic of Infantile Paralysis in Bristol. *Brit. Med. Journ.*, March 18, 1911, p. 609.
- WICKMAN. Die akute Poliomyelitis bzw. Heine-Medinsche Krankheit. Berlin: J. Springer, 1911. M. 4.
- WICKMAN. Die akute Poliomyelitis bzw. Heine-Medinsche Krankheit. *Handbuch der Neurologie*, Bd. 2, 1911, S. 807.
- MODENA und CAVARA. Polyneuritis und Poliomyelitis. *Monatsschr. f. Psychiat. u. Neurol.*, H. 2, 1911, S. 129.
- MEISENBACH. Artificial Muscles in the Early Treatment of Infantile Paralysis: a New Method. *Med. Rec.*, March 11, 1911, p. 435.
- Disseminated Sclerosis.**—MARBURG. Multiple Sklerose. *Handbuch der Neurologie*, Bd. 2, 1911, S. 911.
- OFFERGELD. Die multiple Sklerose und das Geschlechtsleben der Frau in ihren Wechselbeziehungen. *Arch. f. Gynäkol.*, Bd. 93, H. 2, S. 241.
- SCHULTZE. Die Erkennung und Behandlung der multiplen Sklerose in ihren früheren Stadien. Klinischer Vortrag. *D. med. Wchnschr.*, Nr. 8, 9, u. 10, 1911, Sn. 337, 385, 433.

Tumours.—FRAENKEL. Ueber Wirbelgeschwülste im Röntgenbilde. *Fortschr. u. d. Geb. d. Röntgenstr.*, Feb. 2, 1911, S. 245.

Abcess.—FLATAU. Wirbel- und Rückenmarksabscess. *Handbuch der Neurologie*, Bd. 2, 1911, S. 685.

Syringomyelia.—HAENEL. Syringomyelie. *Handbuch der Neurologie*, Bd. 2, 1911, S. 572.

BERNHARDT. Ueber einen atypischen, durch psychische Erkrankung komplizierten Fall von Syringomyelie. *Monatsschr. f. Psychiat. u. Neurol.*, H. 2, 1911, S. 115.

Hæmatomyelia.—LEWANDOWSKY. Rückenmarkserkrankungen durch Störung der Zirkulation. Hæmatomyelie. Spinale Meningealblutung. *Handbuch der Neurologie*, Bd. 2, 1911, S. 550.

Myelitis.—HENNEBERG. Die Myelitis und die myelitischen Strangerkrankungen. *Handbuch der Neurologie*, Bd. 2, 1911, S. 694.

GALWAY. A Case of Incomplete Myelitis following upon an Apparently Trivial Injury. *Journ. Roy. Army Med. Corps*, No. 3, 1911, p. 308.

LESZYNSKY. Report of a Case of Meningomyelitis, with Complete Recovery. *N. Y. Med. Journ.*, Feb. 25, 1911, p. 353.

Trauma.—BRAUN und LEWANDOWSKY. Die Verletzungen der Wirbelsäule und des Rückenmarks. *Handbuch der Neurologie*, Bd. 2, 1911, S. 456.

BLISS. Dislocation of the Sixth Cervical Vertebra forward on the Seventh. *Journ. Nerv. and Ment. Dis.*, Feb. 1911, p. 98.

Spine.—LEWANDOWSKY. Die Missbildungen des Rückenmarks. *Handbuch der Neurologie*, Bd. 2, 1911, S. 446.

ANDRÉ LÉRI. Spondylose Rhizomélisque. *Handbuch der Neurologie*, Bd. 2, 1911, S. 524.

LEWANDOWSKY. Rückenmarkserkrankungen bei Spondylitis. *Handbuch der Neurologie*, Bd. 2, 1911, S. 500.

VIGIER. Contribution à l'étude du spina bifida occulta. Toulouse: Dirion, 1911. 2 fr.

Cerebro-Spinal Fluid.—HUGH MORTON. Biochemical Examination of the Cerebro-spinal Fluid in Cases of Mental Disease. *Journ. Ment. Sc.*, Jan. 1911, p. 1.

MOCHI. Le costanti fisico-chimiche del liquido cefalo-rachideo paragonate a quelle del siero di sangue. Nota I.: Il liquido cefalo-rachideo normale. *Rassegna di Studi Psychiat.*, Vol. i., f. i., 1911, p. 2.

HEILIG. Ueber Pigmentarythrozotose der Cerebrospinalflüssigkeit. *Monatsschr. f. Psychiat. u. Neurol.*, H. 2, 1911, S. 95.

PAPPENHEIM. Ueber die Polynucleose im Liquorcerebrospinalis, insbesondere bei der progressiven Paralyse. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 4, H. 3, 1911, S. 267.

BERTELSEN und BISGAARD. Resultate objektiver Ausmessung der biologischen, cytologischen und chemischen Reaktionen in der Cerebrospinalflüssigkeit, besonders bei Paralytikern. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 4, H. 3, 1911, S. 327.

ROUBINOVITCH et PAILLARD. Le liquide céphalo-rachidien dans les maladies (fin). *Gaz. des Hôp.*, No. 20, 1911, p. 285.

BRAIN—

WEIL und KAFKA. Ueber die Durchgängigkeit der Meningen besonders bei der progressiven Paralyse. *Wien. klin. Wchschr.*, Nr. 10, 1911, S. 335.

Meningitis.—FINKELNBURG. Die Erkrankungen der Meningen. *Handbuch der Neurologie*, Bd. 2, 1911, S. 1078.

DEBRÉ. Recherches épidémiologiques, cliniques et thérapeutiques sur la méningite cérébro-spinale. Paris: Alcan, 1911. 4 fr.

SAYCÉ. Meningitis associated with a Bacterium of Influenza Group. *Austral. Med. Journ.*, Jan. 20, 1911, p. 25.

SIMON. Zur Influenzameningitis. *Monatsschr. f. Kinderheilk.*, No. 10, 1911, S. 549.

TASCHENBERG. Ueber einige atypische Fälle von übertragbarer Genickstarre. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 4, H. 3, 1911, S. 426.

WANIETSCHEK. Bemerkungswerte Fälle von Meningitis (mit Ausgang in Heilung). *Prag. med. Wchnschr.*, Nr. 10, 1911, S. 125.

GALWAY. Tubercular Meningitis following Malignant Tertian Malaria. *Journ. Roy. Army Med. Corps.*, Nr. 3, 1911, p. 310.

Hydrocephalus.—PAP. Ein gebeilter Fall von idiopathischem Hydrocephalus acutus internus mit Erblindung beider Augen. *Wien. med. Wchnschr.*, Nr. 8, 1911.

Thrombosis.—CHICHELE NOURSE. Lateral Sinus Thrombosis following Acute Otitis Media in a Boy. (Otol. Section.) *Proc. Roy. Soc. of Med.*, Feb. 1911, p. 56.

Abscess.—W. MILLIGAN. Two Cases of Cerebellar Abscess. (Otol. Section.) *Proc. Roy. Soc. of Med.*, Feb. 1911, p. 61.

MELCHIOR. Ueber Hirnabscesse und sonstige umschriebene intrakranielle Eiterung im Verlauf des Typhus abdominalis. *Centralbl. f. d. Grenzgeb. d. Med. und Chir.*, Nr. 2, 1911, S. 49.

Tumeurs.—ALQUIER et KLARFELD. Tumeur oblitérant l'aqueduc de Sylvius; Hydrocéphalie ventriculaire. (Soc. de neurol.) *Rev. Neurol.*, No. 4, 1911, p. 272.

SOUQUES. Tumeur de l'angle ponto-cérébelleux, suivie d'autopsie; diagnostic topographique et traitement chirurgical. (Soc. de neurol.) *Rev. Neurol.*, No. 4, 1911, p. 254.

ZUCKERMANN. Ueber ein knochenhaltiges Lipom am Tuber cinereum. *Virchow's Arch.*, Bd. 203, H. 2, 1911, S. 161.

HECHT. Ein Lipom der Pia mater cerebri. *Virchow's Arch.*, Bd. 203, H. 2, 1911, S. 165.

PURVES STEWART. A Clinical Demonstration of a Case of Spasmodic Torticollis and a Case of Cerebellar Tumour. *Clin. Journ.*, March 15, 1911, p. 353.

BAUM. Kavernöses Angiom des Gehirns, mit Erfolg operiert. *Munch. med. Wchnschr.*, Nr. 8, 1911, S. 411.

MONDSCHEN. Zur Kasuistik der Cholesteatomtumoren der hinteren Schädelgrube. *Wien. med. Wchnschr.*, Nr. 9, 1911.

FARNELL. An Extra-cerebral Tumour in the Region of the Hypophysis. *N. Y. Med. Rec.*, March 11, 1911, p. 462.

VINCENT. De quelques causes d'erreur dans le diagnostic des syndromes d'hypertension intracranienne et dans celui de la localisation des tumeurs cérébrales. *Rev. Neurol.*, No. 4, 1911, p. 209.

VELTER et CHAUVET. Deux cas d'hypertension Intracranienne sans Tumeur Cérébrale, guéris par la Craniectomie décompressive. (Soc. de neurol.) *Rev. Neurol.*, No. 4, 1911, p. 269.

Syphilis.—BRANDT. Zur Kasuistik der Hirnsyphilis. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 4, H. 3, 1911, S. 417.

KLIPPEL et MALLET. Panaris de Morvan unilatéraux. Œdème segmentaire du côté opposé. Troubles de la sensibilité à topographie radiculaire. (Soc. de neurol.) *Rev. Neurol.*, No. 4, 1911, p. 265.

Aneurism.—EDWIN MATTHEW and J. H. HARVEY PIRIE. Ruptured Basilar Aneurism. *Rev. Neurol. and Psychiat.*, March 1911, p. 107.

Disorders of Speech.—SAUNDBY. An Address on Aphasia. *Brit. Med. Journ.*, March 18, 1911, p. 605.

LÈVÊQUE. Étude de l'aphasie dans les toxi-infections de l'enfance. (*Thèse*) Toulouse: Dirion, 1911. 4 fr. 50.

PRITCHARD. Intermittent Word-Blindness. (Section for Diseases of Children.) *Proc. Roy. Soc. of Med.*, Feb. 1911, p. 51.

HINSHELWOOD. Two Cases of Hereditary Congenital Word-Blindness. *Brit. Med. Journ.*, March 18, 1911, p. 608.

BACCELLI. Contributo clinico e anatomo-patologico alla sordità verbale. *Riv. ital. di Neuropatol.*, Feb. 1911, p. 70.

BORNSTEIN. Remarques sur l'Apraxie à propos d'un cas d'Apraxie idéatrice avec autopsie. *L'Encéphale*, No. 3, 1911, p. 233.

GORDON. A Case of Asymbolia without Astereognosis and other Sensory Disturbances. (Phila. Neurol. Soc.) *Journ. Nerv. and Ment. Dis.*, Feb. 1911, p. 102.

Skull.—ARMSTRONG. Cranial Asymmetry due to Postural Causes. *Lancet*, March 4, 1911, p. 578.

GENERAL AND FUNCTIONAL DISEASES—

- Epilepsy.**—LAQUER. Beitrag zur Lehre von den epileptoiden Erstickungs-krämpfen. *Neurol. Centralbl.*, Nr. 5, 1911, S. 235.
 HEILBRONNER. Die forense Diagnose der Epilepsie. *Münch. med. Wchnschr.*, No. 9 u. 10, 1911, Sn. 441, 517.
 BENON. Crises épileptiques atypiques. *Gaz. des Hôp.*, No. 31, 1911, p. 464.
 BRATZ. Die affekte-epileptischen Anfälle der Neuropathen und Psychopathen. (Schluss.) *Monatsschr. f. Psychiat. u. Neurol.*, H. 2, 1911, S. 162.
 BECKER. Eine ungewöhnlich starke Reaktion auf Anwendung der Methode nach Toulouse-Richel bei einem alten Epilepsiefall. *Allg. Ztschr. f. Psychiat.*, Bd. 68, H. 2, 1911, S. 256.
- Chorea.**—EICHHORST. Ueber Chorea senilis. *Med. Klinik*, Nr. 8, 1911, S. 289.
 DUBOIS. Contribution à l'étude de la chorée chronique sans hérédité. Toulouse : Dirion, 1911. 2 fr.
- Hysteria.**—BERNHEIM. La différenciation des psycho-névroses (hystérie) et de la neurasthénie. *Journ. de Med.*, No. 8, 1911, p. 161.
 FRIEDLANDER. Hysteria and Modern Psycho-analysis. *Journ. Abnorm. Psychol.*, Feb.-March 1911, p. 297.
 J. E. MIDDLEMISS. Two Cases of Hysteria, treated by Suggestion, with an Account of some Experiments in Hypnotism. *Journ. Ment. Sc.*, Jan. 1911, p. 116.
- Neuroses.**—LOEPER. A propos des psychonévroses. *Prog. Méd.*, No. 10, 1911, p. 124.
 SOLLIER. Névroses et Folie. *Traité Internat. de Psychol. Pathol.*, T. ii., 1911, p. 495.
 RAYMOND. Névroses et psycho-névroses. *Traité Internat. de Psychol. Pathol.*, T. ii., 1911, p. 1.
 BORIS SIDIS. Fundamental States in Psycho-neurosis. *Journ. Abnorm. Psychol.*, Feb.-March 1911, p. 320.
- Neurasthenia.**—W. H. B. STODDART. Nervous Exhaustion. *Clin. Journ.*, March 1, 1911, p. 325.
 LANEHART. Chirurgie und Neurasthenie. *Med. Bl.*, Nr. 4, 1911, S. 37.
 NOBLE. The Nature of Neurasthenia and Acute Insanity. *N. Y. Med. Journ.*, Feb. 18, 1911, p. 301.
 ENGELHORN. Nervosität und Erziehung. Vortrag. Stuttgart : Enke, 1911. M. 1.20.
- Megrim.**—CHEVALLEREAU. La migraine ophthalmique. *Journ. de Méd.*, No. 8, 1911, p. 155.
- Tetany.**—GULEKE. Experimentelle Untersuchungen über Tetanie. *Arch. f. klin. Chir.*, Bd. 94, H. 3, 1911, S. 496.
 HASKINS and GERSTENBERGER. Calcium Metabolism in a Case of Infantile Tetany. *Journ. Exper. Med.*, March 1911, p. 314.
 PARKES WEBER. A Note on "Sensory Tetany," "Vasomotor Tetany," Acroparæsthesia, and Raynaud's Symptoms. *Brit. Med. Journ.*, Feb. 25, 1911, p. 434.
- Exophthalmic Goitre.**—FLIEG. Beitrag zur Kenntnis des Morbus Basedowii. Zürich : E. Spiedel, 1910. M. 1.20.
 BARJHOUX. Des interventions sur le grand sympathique cervical pour goitre exophthalmique. (Thèse.) Trévoux : Jeannin, 1910.
 MAURET. Les troubles psychiques dans la maladie de Basedow. *Journ. de Prat.*, No. 10, 1911, p. 152.
 CRILE. Graves' Disease. A New Principle of Operating based on the Study of 352 Operations. *Journ. Amer. Med. Assoc.*, March 4, 1911, p. 637.
- Acromegaly.**—ORHAN. De l'acromégalie. Revue générale et étude critique. (Thèse.) Montpellier : Firman, Montane et Sicardi, 1911.
 PEL. Akromegalie infolge von Schreck. *Berl. klin. Wchnschr.*, Nr. 12, 1911, S. 519.
- Neuralgia.**—WERTHEIM-SALOMONSON. Neuralgie und Myalgie. *Handbuch der Neurologie*, Bd. 2, 1911, S. 1.

Tetanus.—FEDDEN. A Clinical Lecture on Facial Tetanus. *Clin. Journ.*, March 15, 1911, p. 356.

Alcoholism, etc.—BAUVELLET. Alcoolisme chronique et Paralyse générale progressive. Étude clinique. (*Thèse.*) Bordeaux: Gounouilhau, 1911.

BARBÉ et BENOIST. Les Troubles de la Sensibilité dans la morphinomanie, la cocaïnomanie et l'héroïnomanie. *L'Encéphale*, No. 3, 1911, p. 257.

DE LANCY CARTER. Inebriety: its Commonsense Consideration with a View of eliciting Cure, Prevention, Suppression, and Final Eradication. *Med. Rec.*, Feb. 11, 1911, p. 247.

BELLETRUD et FROISSART. L'alcool et l'aliénation mentale dans le Var. *Ann. d'Hygiène pub.*, fév. 1911, p. 118.

SPECIAL SENSES AND CRANIAL NERVES—

SOBERNHEIM. Nasennebenhöhlenerkrankung und Neuritis optica. *Arch. f. Laryngol.*, Bd. 24, H. 2, 1911, S. 331.

MARGULIÉS. Ueber eine Stichverletzung des Tractus opticus. *Prag. med. Wchnschr.*, Nr. 8, 1911, S. 97.

REDLICH und BONVICINI. Weitere klinische und anatomische Mitteilungen über das Fehlen der Wahrnehmung der eigenen Blindheit bei Hirnkrankheiten. *Neurol. Centralbl.*, Nr. 5 u. 6, 1911, Sn. 227, 301.

VOGT. Infantile Beweglichkeitsdefekte im Bereich der Hirnnerven. *Handbuch der Neurologie*, Bd. 2, 1911, S. 268.

RÖNNE. Gesichtsfeldstudien über das Verhältnis zwischen der peripheren Sehschärfe und dem Farbensinn, speziell die Bedeutung derselben für die Prognose der Sehnervenatrophie. *Klin. Monatsbl. f. Augenheilk.*, Feb. 1911, S. 154.

ROSENFELD. Das Verhalten des kalorischen Nystagmus in der Chloroform-Athernarkose und im Morphinuskopolaminschlaf. *Neurol. Centralbl.*, Nr. 5, 1911, S. 238.

CLOTHIER. Postdiphtheritic Paralysis of the Accommodation. *N.Y. Med. Journ.*, Feb. 18, 1911, p. 322.

OTTO MAYER. Ueber Erkrankungen des Akusticus bei erworbener Lues. *Wien. klin. Wchnschr.*, Nr. 11, 1911, S. 381.

DAN M'KENZIE. Unilateral Deafness, probably Complete, associated with Vertigo. (Otol. Section.) *Proc. Roy. Soc. of Med.*, Feb. 1911, p. 60.

W. MILLIGAN. Suppuration of the Labyrinth; Facial Paralysis; Operation; Recovery. (Otol. Section.) *Proc. Roy. Soc. of Med.*, Feb. 1911, p. 63.

KNIERIM. Accessoriuslähmung mit Sensibilitätsstörungen nach einem Suizidversuch durch Erhängen. *Neurol. Centralbl.*, Nr. 6, 1911, S. 296.

MISCELLANEOUS SYMPTOMS AND CASES—

J. LIDDELL. The Nervous Phenomena occurring in Chronic Mucous Colitis. *Practitioner*, March 1911, p. 413.

H. OPPENHEIM. Über Dauerschwindel (Vertigo permanens). *Neurol. Centralbl.*, Nr. 6, 1911, S. 290.

EUGENIO. Paralisi di moto organiche ed isteriche. *Riv. ital. di Neuropatol.*, Feb. 1911, p. 59.

NEWMARK. A Case which exhibited Thermo-monesthesia, a Perversion of Thermal Sensation. *Journ. Nerv. and Ment. Dis.*, Feb. 1911, p. 88.

SARTESCHI. Gigantismo ed infantilismo sessuale. *Riv. ital. di Neuropatol.*, Feb. 1911, p. 49.

KELLIE. Two Cases of Infantilism. (Section for Diseases of Children.) *Proc. Roy. Soc. of Med.*, Feb. 1911, p. 59.

TWEEDIE and KEITH. Ectopia of the Pituitary, with other Congenital Anomalies of the Nose, Palate and Upper Lip. (Laryngol. Section.) *Proc. Roy. Soc. of Med.*, Feb. 1911, p. 47.

CLAUDE et LÉVY-VALENSI. Sur un cas d'amnésie à prédominance antérograde au cours d'une syphilis cérébro-spinale fruste. (*Soc. de Psychiat.*) *L'Encéphale*, No. 3, 1911, p. 287.

CANTONNET. Élévation anormale d'une Paupière ptosique dans certains mouvements de la mâchoire. (*Soc. de neurol.*) *Rev. Neurol.*, No. 4, 1911, p. 267.

HENRI CLAUDE. Sur la Paraplégie avec Contracture en flexion. (*Soc. de neurol.*) *Rev. Neurol.*, No. 4, 1911, p. 249.

- NOICA. Comment devons-nous définir la contracture? *Rev. Neurol.*, No. 4, 1911, p. 218.
- CLAUDE. Athétose fruste. *Journ. des Prat.*, No. 11, 1911, p. 167.
- CLAUDE. Fugues comitiales. *Journ. des Prat.*, No. 9, 1911, p. 136.
- COURTOIS-SUFFIT et BOURGEOIS. Coccygodynie traumatique. *Journ. de Méd.*, No. 11, 1911, p. 217.
- COURTOIS-SUFFIT et BOURGEOIS. Deux cas de coccygodynie d'origine traumatique. *Ann. d'Hygiène pub.*, fév. 1911, p. 153.
- NOICA. Le mécanisme de la contracture spasmodique. *Presse méd.*, No. 17, 1911, p. 153.
- MARTINET. La céphalalgie des hypotendus. *Presse méd.*, No. 17, 1911, p. 155.
- RAUZIER. Un cas de sclérodactylie. *Gaz. des Hôp.*, No. 25, 1911, p. 365.
- HAMBURGER. Einige funktionelle Erkrankungen, bzw. Simulation derselben. *Wien. med. Wchnschr.*, Nr. 11, 1911.
- MÜNZER. Ueber die cerebrale Lokalisation des Geschlechtstriebes. *Berl. klin. Wchnschr.*, No. 10, 1911, S. 430.
- KILLIAN. Zur Sensibilitätsprüfung der Nasenschleimhaut. *D. med. Wchnschr.*, Nr. 9, 1911, S. 410.
- GOLDSCHIEDER. Ueber Henry Heads Lehre vom Temperatursinn der Haut. *Med. Klinik*, Nr. 8, 1911, S. 293.
- CAMPBELL THOMSON. On Headaches. *Med. Mag.*, Feb. 1911, p. 72.
- HERMANN. Ueber Linksseitigen kontinuierlichen Krampf der Zwerchfells im letzten Stadium der progressiven Paralyse, begleitet von konvulsiven Zuckungen der ganzen linken Seite. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 4, H. 3, 1911, S. 392.
- MARINESCO. Quelques recherches de palimétrie. *Rev. Neurol.*, No. 5, 1911, p. 281.
- PIERRE MARIE et BARRÉ. Sur le Réflexe cubito-fléchisseur des doigts. (Soc. de neurol.) *Rev. Neurol.*, No. 4, 1911, p. 260.
- HASKOVEC. Le Réflexe Glutéal. *Rev. Neurol.*, No. 5, 1911, p. 295.

PSYCHIATRY

- STEIN. Grund-Schema der Geisteskrankheiten. Wien: Safar, 1911. M. 1.40.
- T. S. CLOUSTON. Unsoundness of Mind. London: Methuen & Co., Ltd., 1911. 7s. 6d.
- BECHTEREW. Troubles psychiques dans les maladies nerveuses organiques. *Traité Internat. de Psychol. Pathol.*, T. ii., 1911, p. 79.
- H. STELZNER. Die psychopathischen Konstitutionen und ihre sociologische Bedeutung. Berlin: S. Karger, 1910.
- GENIL-PERRIN. Un exemple d'hérédité congestive. (Soc. de Psychiat.) *L'Encéphale*, No. 3, 1911, p. 266.
- H. D. MACPHAIL. A Case of Moral Insanity with Pyromania. *Journ. Ment. Sc.*, Jan. 1911, p. 124.
- R. M. MARSHALL. Periodic Attacks of Excitement and Depression in the Chronic Insane. *Journ. Ment. Sc.*, Jan. 1911, p. 74.
- BARTON WHITE and SCHOLBERG. Pituitary and Suprarenal Growths in a Case of Insanity. *Journ. Ment. Sc.*, Jan. 1911, p. 18.
- T. E. K. STANSFIELD. Heredity and Insanity. *Journ. Ment. Sc.*, Jan. 1911, p. 55.
- G. H. SAVAGE. On Insanity and Marriage. *Journ. Ment. Sc.*, Jan. 1911, p. 97.
- FOULKS. The Sterilisation of the Insane. *Journ. Ment. Sc.*, Jan. 1911, p. 63.
- NAUNNACK. Is Sterilization of the Habitual Criminal Justifiable? *Med. Rec.*, Feb. 11, 1911, p. 249.
- DUPRE et GELMA. Hallucinoses chroniques. (Soc. de Psychiat.) *L'Encéphale*, No. 3, 1911, p. 282.
- ROUBINOVITCH. Les Dégénérés inférieurs. *Traité Internat. de Psychol. Pathol.*, T. ii., 1911, p. 506.
- COLIN et BOURILHET. Les Dégénérés et la Dégénérescence mentale. *Traité Internat. de Psychol. Pathol.*, T. ii., 1911, p. 551.

- LEGRAIN. Les Folies à éclipse. Essai sur le rôle du Subconscient dans la Folie. Paris: Bloud, 1910.
- NADAL. Excitation motrice à forme poriomaniaque chez un circulaire. *Ann. Méd.-Psychol.*, No. 2, 1911, p. 216.
- BAGENOFF. Avant-propos sur la Cyclothymie. *Traité Internat. de Psychol. Pathol.*, T. ii., 1911, p. 709.
- REGIS et HESNARD. Les Confusions Mentales. *Traité Internat. de Psychol. Pathol.*, T. ii., 1911, p. 795.
- DUMAS et DELMAS. Psychose confusionnelle par émotion-choc. (Soc. de Psychiat.) *L'Encéphale*, No. 3, 1911, p. 270.
- PILCZ. Psychoses infectieuses. *Traité Internat. de Psychol. Pathol.*, T. ii., 1911, p. 767.
- A. MARIE et RICHE. Psychoses Toxiques d'origine exogène. *Traité Internat. de Psychol. Pathol.*, T. ii., 1911, p. 918.
- PARAVICINI. Psicosi maniaco-depressiva, stupore catatonico ed accessi epilettiformi. *Rassegna di Studi Psichiat.*, Vol. i., f. i., 1911, p. 17.
- PILCZ. Psychoses maniaques dépressives et périodiques. *Traité Internat. de Psychol. Pathol.*, T. ii., 1911, p. 726.
- SÉRIEUX et CAPGRAS. Délires de revendication. *Traité Internat. de Psychol. Pathol.*, T. ii., 1911, p. 601.
- SÉRIEUX et CAPGRAS. Délires d'interprétation. *Traité Internat. de Psychol. Pathol.*, T. ii., 1911, p. 640.
- MAGNAN et SÉRIEUX. Délire chronique. *Traité Internat. de Psychol. Pathol.*, T. ii., 1911, p. 605.
- DUPRÉ et LOGRE. Les Délires d'Imagination. *L'Encéphale*, No. 3, 1911, p. 209.
- DUPRÉ et FOUQUE. Un cas de délire à trois. (Soc. de Psychiat.) *L'Encéphale*, No. 3, 1911, p. 285.
- BRAVETTA. La reazione meiotagminica nelle malattie mentali. *Rassegna di Studi Psichiat.*, Vol. i., f. i., 1911, p. 31.
- LAGRIFFE. Quelques considérations sur l'assistance des aliénés et sur le projet de réforme de la loi du 30 juin 1838. *Ann. Méd.-Psychol.*, No. 2, 1911, p. 243.
- LADAME. Une visite à la colonie agricole d'Uchtspringe. *Ann. Méd.-Psychol.*, No. 2, 1911, p. 230.
- PERDRAU. Clinical Aspect and Treatment of Asylum Dysentery. *Journ. Ment. Sc.*, Jan. 1911, p. 93.
- COURTNEY. The Youthful Psychopath. *Boston Med. and Surg. Journ.*, Feb. 16, 1911, p. 219.
- BALLET. Comment faut-il concevoir une hallucination? Délires systématisés hallucinatoires. *Journ. des Prat.*, No. 11, 1911, p. 165.
- HARTENBERG. La base organique de l'éreuthophobie et son treatment. *Presse méd.*, No. 16, 1911, p. 140.
- DUHEM. The Treatment of Heroinomania and Morphinomania. *Med. Press*, Feb. 22, 1911, p. 196.
- NOBLE. The Treatment of Acute Mania. *Med. Rec.*, March 11, 1911, p. 433.
- VÁLEK. Ueber die Heilbarkeit und Prophylaxe des funktionellen Geistesstörungen. *Wien. med. Wchnschr.*, Nr. 11, 1911.
- PILCZ. Klinik der arteriosklerotischen Geistesstörungen. *Wien. med. Wchnschr.*, Nr. 8, 1911.
- HIGIER. Beitrag zur Klinik der psychischen Störungen bei chronischem Kokainismus. *Munch. med. Wchnschr.*, No. 10, 1911, S. 501.
- SICHEL. Zur Psychopathologie des Selbstmordes. *D. med. Wchnschr.*, Nr. 10, 1911, S. 445.
- PLASKUDA. Ueber Stereotypien und sonstige katatonische Erscheinungen bei Idioten. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 4, H. 3, 1911, S. 399.
- TREDGOLD. The Feeble-Minded Child. *Journ. Roy. Sanit. Instit.*, March 1911, p. 137.
- SOMMER. Rapport psychiatrique sur le IV^e Congrès organisé par le Société de psychologie expérimentale. *Arch. de Neurol.*, mars 1911, p. 175.
- PAGET LAPAGE. Feeble-Mindedness in Children of School Age. Manchester: University Press, 1911.

- SHERLOCK. The Feeble-Minded. A Guide to Study and Practice. London: Macmillan & Co., 1911.
- SHUTTELWORTH and POTTS. Mentally Deficient Children. 3rd Edition. London: H. K. Lewis, 1910.
- MÖNKEMÖLLER. Das Zucht- und Tollhaus zu Celle. *Allg. Ztschr. f. Psychiat.*, Bd. 68, H. 2, 1911, S. 155.
- BERTSCHINGER. Heilungsvorgänge bei Schizophrenen. *Allg. Ztschr. f. Psychiat.*, Bd. 68, H. 2, 1911, S. 209.
- KAUFFMANN. Ueber die Nachteile der Arbeitstherapie bei akuter Geisteskrankheit. *Allg. Ztschr. f. Psychiat.*, Bd. 68, H. 2, 1911, S. 250.
- ZIEHEN. Les Démences. *Traité Internat. de Psychol. Pathol.*, T. ii, 1911, p. 281.
- ROUBINOVITCH. La démence précoce. *Prog. méd.*, No. 10, 1911, p. 117.
- DENY et LHERMITTE. Les Démences Précoces. *Traité Internat. de Psychol. Pathol.*, T. ii, 1911, p. 439.
- SÉGLAS et LOGRE. Des rémissions dans la démence précoce. (Soc. de Psychiat.) *L'Encéphale*, No. 3, 1911, p. 276.
- A. MARIE et LHERMITTE. La Paralyse Générale. *Traité Internat. de Psychol. Pathol.*, T. ii, 1911, p. 155.
- JÜSGEN. Ein Fall von progressiver Paralyse im Anschluss an Unfall unter den Anfangerscheinungen der Hysterie. *Neurol. Centralbl.*, Nr. 5, 1911, S. 241.
- DAVEREDE. Contribution à l'étude des pseudo-paralysies générales. Toulouse: Dirion, 1911. 3 fr.
- HANNARD et GAYET. De la paralysie générale et de la tabo-paralysie conjugales dans le département du Nord. *Ann. Méd.-Psychol.*, No. 2, 1911, p. 201.
- ROUSSET et PUILLET. Un cas d'hypothermie prolongée chez un paralytique général. *Rev. Neurol.*, fév. 15, 1911, p. 467.
- LAIGNEL-LAVASTINE et FAY. Eruption bulleuse des extrémités chez un paralytique général. (Soc. de Psychiat.) *L'Encéphale*, No. 3, 1911, p. 294.
- LANDSBERGEN. Lues Cerebri und Progressive Paralyse, ein klinischer und anatomischer Beitrag. *Monatsschr. f. Psychiat. u. Neurol.*, H. 2, 1911, S. 147.
- SCHÖNBELS. Ueber atypischen Ausfall der Wassermann-Reaktion bei einem Falle von anatomisch-pathologisch sicherer Paralyse. *Monatsschr. f. Psychiat. u. Neurol.*, H. 2, 1911, S. 125.
- KOCH. Chemical Study of the Brain in Cases of Dementia. *Journ. Exper. Med.*, March 1, 1911, p. 301.
- PLANGE. Heilversuche bei Paralytikern. *Allg. Ztschr. f. Psychiat.*, Bd. 68, H. 2, 1911, S. 223.
- HEFFERNAN. A Case of General Paralysis of the Insane in a Native of India. *Ind. Med. Gaz.*, Jan. 11, 1911, p. 17.
- STERN. Ueber die spezifische Bedeutung der Harnreaktion mit Liquor Bellostii bei Paralyse. *Münch. med. Wchnschr.*, No. 9, 1911, S. 467.
- TITUS. Die Bedeutung der Harnreaktion mit Liquor Bellostii bei progressiver Paralyse. *Wien. med. Wchnschr.*, Nr. 12, 1911.

TREATMENT *

- GAUVAIN. The Mechanical Treatment of Spinal Caries. *Lancet*, March 4, 1911, p. 568.
- MACLEOD YEARSLEY. The Education of the Deaf, with Suggestions as to its Future Modifications and Development. *Lancet*, Feb. 25, 1911, p. 495.
- KEMPNER. Das neue Sedativum und Hypnoticum Adalin. *Neurol. Centralbl.*, Nr. 6, 1911, S. 309.
- LESZYNSKY. Syphilis and the Nervous System, with Remarks on the Wassermann Test and "Salvarsan." *Med. Rec.*, Feb. 18, 1911, p. 288.
- WERTHER. Ueber die Neurorezidive nach Salvarsan, über Abortivheilung und weitere Erfahrung. *Münch. med. Wchnschr.*, No. 10, 1911, S. 503.

* A number of references to papers on Treatment are included in the Bibliography under the individual Diseases.

- JORGENSEN. Ein Fall tödlicher Arsenikvergiftung bei Behandlung von Gehirnsyphilis mit Ehrlich-Hata "606." *Med. Klinik*, Nr. 10, 1911, S. 372.
- ROBIN. Traitement de l'ictus apoplectique de la syphilis cérébrale et de l'hémiplégie. *Bull. gén. de Thérap.*, mars 8, 1911, p. 321.
- GLAMSER. Die Beeinflussung der Hirnzirkulation durch Bäder. *Zschr. f. physikal u. diät. Therapie*, Bd. 15, H. 3, 1911, S. 129.
- GOTTSCHALK. De l'influence du régime alimentaire au point de vue de la prophylaxie et de la Genèse des accidents convulsifs. *Arch. de Neurol.*, mars 1911, p. 158.
- FELZMANN. Cas de bromisme avec troubles cérébraux. *Arch. de Neurol.*, mars 1911, p. 152.
- ARXHAUSEN. Die chirurgische Therapie der Rückenmarkserkrankungen. *Fortschr. d. Med.*, Nr. 11, 1911, S. 241.
- ROGERS. Intracranial Surgical Lesions in Children. *Journ. Amer. Med. Assoc.*, March 4, 1911, p. 644.
- ROBERT ABBE. Resection of the Posterior Roots of Spinal Nerves to relieve Pain, Pain Reflex, Athetosis, and Spastic Paralysis—Dana's Operation. *Med. Rec.*, March 4, 1911, p. 377.

Bibliography

ANATOMY

- SCHULTZE. Über den direkten Zusammenhang von Muskelfibrillen und Sehnenfibrillen. Würzburg: Kabitsch, 1911. M. —80.
- MÖLLGAARD. Eine morphologische Studie über den Nervenkomplex Vagoglossopharyngeo-accessorius. *Skand. Arch. f. Physiol.*, Bd. 25, H. 1-2-3, 1911, S. 69.
- J. B. JOHNSTON. The Telencephalon of Selachians. *Journ. Comp. Neurol.*, March 1911, p. 1.
- LEGENDRE et MINOT. Formation de nouveaux prolongements par certaines cellules nerveuses des ganglions spinaux conservés hors de l'organisme. *Anat. Anz.*, März 29, 1911, p. 554.
- CURTIS and HELMHOLZ. A Study of the Anterior Horn Cells of an Amelus and their Relation to the Development of the Extremities. *Trans. Chicago Path. Soc.*, Feb. 1, 1911, p. 127.
- SPIELMEYER. Technik der mikroskopischen Untersuchung des Nervensystems. Berlin: Springer, 1911. M. 4.40.

PHYSIOLOGY

- MÜLLER. Allgemeine Bemerkungen zur Physiologie des vegetativen Nervensystems. *D. med. Wchnschr.*, Nr. 13, 1911, S. 583.
- FRANZ. On the Function of the Post-Central Convolutions. *Journ. Comp. Neurol.*, March 1911, p. 115.
- WIGGERS. The Physiology of the Pituitary Gland and the Actions of its Extracts. *Amer. Journ. Med. Sc.*, April 1911, p. 502.
- DUNAN. Rôle de l'hypophyse dans la nutrition. *Presse méd.*, No. 31, 1911, p. 312.
- PFAHL. Die genauere Untersuchungen der verschiedensten Bewegungsvorgänge, namentlich der willkürlichen Bewegungen mittels graphischer Methoden. *Klinik f. psychis. u. nerv. Krankh.*, Bd. 6, H. 1, 1911, S. 33.
- LEFEUVRE et RIVIÈRE. La Fatigue cérébral chez le tireur. Étude ergographique. Paris: Impr. Nationale, 1911.
- LEFEUVRE. Régénération des centres nerveux supérieurs chez le pigeon. Paris: Impr. Nationale, 1911.
- D. F. HARRIS. The Physiology and Hygiene of Sleep. (Annual Public Lecture.) Birmingham: Cornish Brothers, 1911.
- MARINESCO et MINEA. Sur l'influence exercée par l'ablation totale du corps thyroïde et par l'insuffisance thyroïdienne sur la dégénérescence et la régénérescence des nerfs sectionnés. *Ann de Biol.*, jan. 1911.
- RYAN and M'GUIGAN. The Site of Action of Strychnine in the Spinal Cord. *Journ. Pharmacol.*, March 1911, p. 319.
- MILLER and LEWIS. The Effect on Blood Pressure of the Extracts made from the Various Anatomic Components of the Hypophysis. *Trans. Chicago Path. Soc.*, Feb. 1, 1911, p. 133.
- NEUMANN. Zur Frage der Sensibilität der inneren Organe. Funktioneller Nachweis sensibler Fasern im Nervus Splanchnicus und Vagus. *Zentralbl. f. Physiol.*, Nr. 26, 1911, S. 1213.
- SCAFFIDI. Sur di un fenomeno di "sensibilizzazione" o "viabilità" osservato nella stimolazione della porzione cardiaca del vago. *Ztschr. f. allg. Physiol.*, Bd. 12, H. 3, 1911, S. 352.
- DEASON and ROBB. On the Pathways for the Bulbar Respiratory Impulses in the Spinal Cord. *Amer. Journ. Physiol.*, Vol. xxviii., No. 1, 1911, p. 57.

- OSBORNE and KILVINGTON. Central Nervous Response to Peripheral Nervous Distortion. *Brain*, Part 131, Vol. xxxiii., 1911, p. 288.
 SCAFFIDI. Sulle modificazioni del ricambio della creatinina e della creatina nella fatica. *Sperimentale*, marzo 1911, p. 790.

PSYCHOLOGY

- ERNEST JONES. Some Instances of the Influence of Dreams on Waking Life. *Journ. Abnorm. Psychol.*, April-May 1911, p. 11.
 G. R. JEFFREY. On the Mechanism of Mental Processes, with Special Reference to Emotional Control. *Med. Press*, April 5, 1911, p. 359.
 HAVELOCK ELLIS. Symbolismus in Träumen. *Ztschr. f. Psychother.*, Bd. 3, H. 1, 1911, S. 29.
 HARTUNG. Kritische Tage und Träume. *Ztschr. f. Psychother.*, Bd. 3, H. 1, 1911, S. 47.
 POPPELREUTER. Beiträge zur Raumpsychologie. *Ztschr. f. Psychol.*, Abt. I., Bd. 58, H. 3-4, 1911, S. 200.
 ACH. Willensakt und Temperament. *Ztschr. f. Psychol.*, Abt. I., Bd. 58, H. 3-4, 1911, S. 263.
 MINNEMANN. Untersuchungen über die Differenz der Wahrnehmungsgeschwindigkeit von Licht- und Schallreizen. *Arch. f. d. ges. Psychol.*, Bd. 20, H. 3, 1911, S. 227.
 FEUCHTWANGER. Versuche über Vorstellungstypen. *Ztschr. f. Psychol.*, Abt. I., Bd. 58, H. 3-4, 1911, S. 161.

PATHOLOGY

- YAWGER. Colloid Bodies in the Central Nervous System. Their Presence after Severe Traumatism in a Case of Dementia Paretica. *Journ. Nerv. and Ment. Dis.*, March 1911, p. 158.
 CARLYLL. Seven Cases of Amaurotic Idiocy (Tay-Sachs Disease). (Pathol. Section.) *Proc. Roy. Soc. of Med.*, March 1911, p. 147.
 GORDON HOLMES. The Pathological Anatomy of a Case of Amaurotic Family Idiocy. (Pathol. Section.) *Proc. Roy. Soc. of Med.*, March 1911, p. 199.
 M. et Mme. LONG. Examen histologique de quatre cas de Maladie de Little. (Soc. de neurol.) *Rec. Neurol.*, No. 6, 1911, p. 354.
 BRUCE, HAMERTON, and BATEMAN. Experiments to ascertain if the Domestic Fowl of Uganda may act as a Reservoir of the Virus of Sleeping Sickness. *Journ. Trop. Med.*, April 1911, p. 97.
 HIGIER. Zur Pathologie der angeborenen, familiären und hereditären Krankheiten, speziell der Nerven- und Geisteskrankheiten. *Arch. f. Psychiat.*, Bd. 48, H. 1, 1911, S. 41.
 MARINESCO. Sur la structure des plaques dites séniles dans l'écorce cérébrale des sujets âgés et atteints d'affections mentales. *Compt. rendu de la Soc. de Biol.*, No. 14, 1911, p. 606.

CLINICAL NEUROLOGY

GENERAL—

- KNAPP. The Alleged Increase of Nervous Diseases. *Boston Med. and Surg. Journ.*, March 23, 1911, p. 419.
 DEJERINE. Clinique des maladies du système nerveux. Leçon inaugurale. *Presse méd.*, No. 26, 1911, p. 253.
 PASCAL. La Démence Précoce. Étude psychologique, médicale et médico-légale. Paris: F. Alcan, 1911. 4 fr.
 BALLEET. Clinique des maladies mentales et de l'encéphale. *Journ. des Pratic.*, No. 14, 1911, p. 209.
 WARRINGTON. Injury as an Etiological Factor in the Causation of Organic Nervous Disease. *Med. Chron.*, April 1911, p. 1.
 GOLDTHWAIT. The Lumbo-Sacral Articulation. An Explanation of many Cases of "Lumbago," "Sciatica," and Paraplegia. *Boston Med. and Surg. Journ.*, March 16, 1911, p. 365.

MUSCLES—

- CASTOR. Three Cases of Pseudo-Muscular Hypertrophy in one (Burmese) Family. *Journ. Trop. Med.*, April 1911, p. 99.
 BRASCH. Ueber Muskeldystrophie und Myotonie nach Unfall. *Münch. med. Wchnschr.*, No. 12, 1911, S. 621.
 JASTROWITZ. Hereditäre Ataxie mit Muskeldystrophie. *Neurol. Centralbl.*, Nr. 8, 1911, S. 426.

NERVES—

- LAIGNEL-LAVASTINE et TINEL. Neurofibromatose avec troubles à topographie radiculaire du membre supérieur gauche et Syndrome de Brown-Séquard. (Soc. de neurol.) *Rev. Neurol.*, No. 6, 1911, p. 372.
 TOUCHE. Un cas de maladie de Recklinghausen. (Soc. de neurol.) *Rev. Neurol.*, No. 6, 1911, p. 398.
 ZOSIN. Un cas de syndrome radiculaire cervico-dorsal. *Rev. Neurol.*, No. 6, 1911, p. 338.
 TINEL. Les Lésions Radiculaires chez les Tuberculeux. (Soc. de neurol.) *Rev. Neurol.*, No. 6, 1911, p. 402.
 GARA. Ein Abdominaldrucksymptom der Ischias. *D. med. Wchnschr.*, Nr. 16, 1911, S. 736.

SPINAL CORD—

- FREIDENBERG. Contribution à l'étude de l'hémilésion de la moelle épinière. Un cas de paralysie de Brown-Séquard d'origine traumatique. *Arch. de Neurol.*, avril 1911, p. 205.

- Poliomyelitis Anterior Acuta.**—DUTOIT. Die Heine-Medinsche Krankheit. *Med. Klinik*, Nr. 16, 1911, S. 622.
 MILHIT. La paralysie spinale infantile. *Prog. Méd.*, No. 13, 1911, p. 153.
 STEINHARDT. Anterior Poliomyelitis. *N. Y. Med. Journ.*, April 15, 1911, p. 721.
 HARRIS. An Unusual Case of Infantile Paralysis. *N. Y. Med. Journ.*, April 1, 1911, p. 626.
 NETTER. Sur l'épidémie de paralysie infantile. *Journ. de Med.*, No. 12, 1911, p. 239.
 KRAUS. Experimentelle Beiträge zur Frage der Schutzimpfung bei Poliomyelitis acuta. *Ztschr. f. Immunitätsforsch.*, Bd. 9, H. 2, 1911, S. 117.
 OSGOOD and LUCAS. Transmission Experiments with the Virus of Poliomyelitis. *Journ. Amer. Med. Assoc.*, No. 7, 1911, p. 495.
 OULMANY et BAUDOUIN. Poliomyélite antérieure à rechute. Rôle possible d'un traumatisme antérieur. *Rev. Neurol.*, No. 6, 1911, p. 333.
 MORSE. Lumbar Puncture and Leukocyte Count in Diagnosis of Acute Poliomyelitis. *Arch. of Ped.*, March 1911, p. 164.
 J. M. BERRY. Treatment of the Paralysis following Acute Poliomyelitis. *Journ. Amer. Med. Assoc.*, No. 14, 1911, p. 1031.
 GILLETTE. The Orthopedic Treatment of Infantile Paralysis. *Pediatrics*, March 1911, p. 140.

- Progressive Muscular Atrophy.**—BATTEN. Progressive Spinal Muscular Atrophy of Infants (Werdnig-Hoffmann). (Clin. Section.) *Proc. Roy. Soc. of Med.*, March 1911, p. 115.

- Amyotrophic Lateral Sclerosis.**—GELMA et STRAHLIN. Sclérose latérale amyotrophique et traumatisme. *Gaz. des Hôp.*, No. 34, 1911, p. 509.

- Tumours.**—STANLEY BARNES. Two Cases of Spinal Tumour. *Birmingham Med. Rev.*, April 15, 1911, p. 155.
 SCHLAPP. A Neuro-epithelioma developing from a Central Gliosis after an Operation on the Spinal Cord. *Journ. Nerv. and Ment. Dis.*, March 1911, p. 129.

- Spinal Caries.**—CADWALADER. The Sudden Onset of Paralysis in Pott's Disease without Deformity of the Vertebrae. *Amer. Journ. Med. Sc.*, April 1911, p. 546.

- Myelitis.**—LEWY. Ein Fall von subakuter, disseminierter Myelitis nach rekurrender Endocarditis. *D. med. Wchnschr.*, Nr. 14, 1911, S. 634.

- Trauma.**—SWAN, POWERS, and PERSHING. An Unusual Case of Fracture of the Bodies of the Fourth, Fifth, and Sixth Cervical Vertebrae, with Injury of the Spinal Cord. *Med. Rec.*, April 15, 1911, p. 664.

- Cerebro-Spinal Fluid.**—LÉVY-VALENSI. Viscosité du liquide céphalo-rachidien normal et pathologique. *Gaz. des Hôp.*, No. 40, 1911, p. 603.
 CROHN. An Improved Apparatus for estimating the Pressure in the Cerebro-spinal System. *Journ. Amer. Med. Assoc.*, No. 13, 1911, p. 962.
 KLEINEBERGER. Zur differentialdiagnostischen Bedeutung der Lumbalpunktion und der Serodiagnostik. *Arch. f. Psychiat.*, Bd. 48, H. 1, 1911, S. 264.
 COLIE. Sudden Death following Spinal Puncture for Diagnosis. *Med. Rec.*, March 18, 1911, p. 487.

BRAIN—

- Meningitis.**—STUCKY. Report of Eight Cases of Fatal Meningeal and Cerebral Complications of Suppurative Ethmoiditis. *Cleveland Med. Journ.*, March 1911, p. 210.
 CLEMENS and GOULD. Cerebro-spinal Meningitis due to Influenza Bacillus. *Arch. of Ped.*, March 1911, p. 210.
 SOPHIAN. A Study of Sixty Cases of Meningitis. *Arch. of Ped.*, March 1911, p. 201.
 DAVID and SPEIK. Typhoid Meningitis. *Journ. Amer. Med. Assoc.*, No. 12, 1911, p. 882.
 LAFARCINADE. Tuberculous Meningitis in Newly-born Infants—The Somnolent Form. *Med. Press*, April 19, 1911, p. 414.
 HALLION et BAUER. Sur les variations de Glucose céphalo-rachidien dans un cas de Méningite à bacilles de Pfeiffer. (Soc. de neurol.) *Rev. Neurol.*, No. 6, 1911, p. 381.
Hydrocephalus.—LEONARD. Roentgen Diagnosis of Hydrocephalus. *Arch. Roentgen Ray*, No. 127, 1911, p. 336.
 EMMA ANTONIUS. Case of Arrested Hydrocephalus. *Pediatrics*, March 1911, p. 158.
Softening.—SCHAFFER. Le Ramollissement cérébral. Diagnostic entre le ramollissement et l'encéphalite. (Thèse.) Paris: Steinheil, 1910.
Encephalitis.—STEPHENSON. The Oculo-motor Type of Polio-encephalitis. (Section for Diseases of Children.) *Proc. Roy. Soc. of Med.*, March 1911, p. 87.
Tuberose Sclerosis.—BABONNEIX. Un cas de sclérose tubéreuse. *L'Encéphale*, No. 4, 1911, p. 313.
Diplegia.—CAUTLEY. Cerebral Athetotic Diplegia. (Section of Diseases in Children.) *Proc. Roy. Soc. of Med.*, March 1911, p. 77.
Tumeurs.—PFEIFER. Zu der Erwiderung von Herrn. Prof. Dr Schuster auf meine Arbeit über "Psychische Störungen bei Hirntumoren." *Arch. f. Psychiat.*, Bd. 48, H. 1, 1911, S. 449.
 CASSIRER und MÜHSAM. Ueber die Extirpation eines grossen Angiom des Gehirns. *Berl. klin. Wchnschr.*, No. 17, 1911, S. 755.
 ASTWAZATUROW. Ueber Epilepsie bei Tumoren des Schlafenlappens. *Monatsschr. f. Psychiat. u. Neurol.*, April 1911, S. 342.
 LIBERT. Syndrome choréique et tumeurs intra-dure-mériennes chez une alcoolique. *L'Encéphale*, No. 4, 1911, p. 351.
 SÉZARY et JUMENTIÉ. Étude anatomo-pathologique de cinq Tumeurs Ponto-cérébelleuses. (Soc. de neurol.) *Rev. Neurol.*, No. 6, 1911, p. 398.
 TOUCHE. Tumeur du pédoncule cérébrale coïncident avec une Hémorragie de la couche optique. (Soc. de neurol.) *Rev. Neurol.*, No. 6, 1911, p. 397.
 LHERMITTE et KLARFELD. Gliome pré-protubérantiels avec métastases. Hémiplegie sans dégénération du faisceau pyramidal. (Soc. de neurol.) *Rev. Neurol.*, No. 6, 1911, p. 392.
 ALQUIER et KLARFELD. Huit cas de Tumeurs juxta ou intraprotubérantielles avec autopsie. Étude des signes de localisation. (Soc. de neurol.) *Rev. Neurol.*, No. 6, 1911, p. 391.
 APEKT et PORAK. Tumeur de la Glande Pinéale chez une Obèse; atrophie mécanique de l'Hypophyse; roviviscence des Thymus. (Soc. de neurol.) *Rev. Neurol.*, No. 6, 1911, p. 388.
 LOPES. Sobre un caso de sarcoma sub-cortical do lóbo parietal direito. *Arch. Brasil. de Med.*, Fev. 1911, p. 165.
Syphilis.—MICHELL CLARKE. The Long-Fox Lecture: Cerebro-spinal Syphilis. *Bristol Med.-Surg. Journ.*, March 1911, p. 1.

- Aphasia.**—HEILBRONNER. 50 Jahre Aphasieforschung. *Münch. med. Wchnschr.*, No. 16, 1911, S. 844.
 MINGAZZINI. Nouvelles études sur le siège de l'aphasie motrice. *Arch. ital. de Biol.*, T. 14, f. 2, 1911, p. 218.
 FORSTER. Ueber isolierte Agraphie. *D. Arch. f. klin. Med.*, Bd. 102, H. 1-2, 1911, S. 82.
 GOLDSTEIN. Die amnestische und die zentrale Aphasie (Leitungsaphasie). *Arch. f. Psychiat.*, Bd. 48, H. 1, 1911, S. 314.
 DEVAUX et LOGRE. Amnésie et fabulation. *Nouv. Icon. de la Salpêtr.*, 1911, p. 90.

GENERAL AND FUNCTIONAL DISEASES—

- Epilepsy.**—CLAUDE. Quelques cas d'épilepsie. *Journ. des Prat.*, No. 12, 1911, p. 183.
 HEINRICH. Beiträge zur Diagnose und Therapie der genuinen Epilepsie. *Epilepsia*, Bd. 2, Br. 3, 1911.
 KLEPPER. Die Unterscheidung von epileptischen und katatonischen Zuständen, speziell aus den Assoziationen. *Klinik f. psychis. u. nerv. Krankh.*, Bd. 6, H. 1, 1911, S. 1.
 BENON. L'asthénomanie post-épileptique. *Gaz. des Hôp.*, No. 45, 1911 p. 683.
Chorea.—COOMBS. The Nature and Treatment of Chorea. *Bristol Med.-Chir. Journ.*, March 1911, p. 51.
 LORENZ. Two Cases of Huntington's Chorea with Spinal Fluid Findings. *Journ. Amer. Med. Assoc.*, No. 13, 1911, p. 941.
Paralysis Agitans.—WILLIGE. Ueber Paralysis agitans im jugendlichen Alter. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 4, H. 4, 1911, S. 520.
Hysteria.—CORIAT. A Contribution to the Psychopathology of Hysteria. *Journ. Abnorm. Psychol.*, April-May 1911, p. 33.
 ORMEROD. Two Theories of Hysteria. *Brain*, Part 131, Vol. xxxiii, 1911, p. 269.
 BERNARD HART. Freud's Conception of Hysteria. *Brain*, Part 131, Vol. xxxiii, 1911, p. 339.
 PRICE. Etiology of the Functional Nervous Diseases. *N.Y. Med. Journ.*, April 15, 1911, p. 729.
 WERTHER. Ueber hysterische Hautnekrose mit erythematösem und exsudativem Vorstadium. *Dermat. Ztschr.*, April 1911, S. 341.
 S. A. K. WILSON. Some Modern French Conceptions of Hysteria. *Brain*, Part 131, Vol. xxxiii, 1911, p. 293.
 GLORIEUX. Un cas d'œdème hystérique. *Journ. de Neurol.*, fév. 20, 1911, p. 61.
Neurasthenia.—WILLIAM BROWNING. Is there such a Disease as Neurasthenia? *N.Y. State Journ. of Med.*, Jan. 1911.
 POROSZ. Die Sexuelle Neurasthenie. *Wien. med. Wchnschr.*, Nr. 13, 1911, S. 836.
 BELBEZE. La Neurasthénie Rurale. Étude psychologique et clinique de la neurasthénie chez le Paysan contemporain. Paris: Vigot Frères, 1911. 3 fr. 50.
 CLIVE RIVIERE. Neurasthenia in Children. *Pediatrics*, March 1911, p. 129.
 ROPER. The Workmen's Compensation Act and Traumatic Neurasthenia. *Med. Mag.*, April 1911, p. 190.
Writers' Cramp.—KÜHNE. Schreibkrampf, Schreibstörungen, etc. Leipzig: Demme, 1911. M.—30.
Megrim.—BOUCHAUD. Accès de migraine simple. Paralyse du sphincter de l'iris et du muscle ciliaire. *Journ. de Neurol.*, fév. 5, 1911, p. 41.
Tetany.—OPPENHEIMER. The Pathological Findings in the Parathyroids in a Case of Infantile Tetany. *Amer. Journ. Med. Sc.*, April 1911, p. 558.
 W. H. BROWN. Parathyroid Implantation in the Treatment of Tetania Parathyreopriva. *Ann. of Surg.*, Part 219, 1911, p. 305.
Exophthalmic Goitre.—SAUNDBY. Clinical Lecture on Graves' Disease. *Med. Press*, April 5, 1911, p. 354.
 SUDECK. Ueber die chirurgische Behandlung des Morbus Basedowii. *Münch. med. Wchnschr.*, No. 16, 1911, S. 837.

- SAENGER und SUDECK. Ueber den Morbus Basedowii. *Munch. med. Wchnschr.*, No. 16, 1911, S. 833.
- Acromegaly.**—WITTE. Ein Beitrag zur Symptomatologie und pathologischen Anatomie der Akromegalie. *Arch. f. Psychiat.*, Bd. 48, H. 1, 1911, S. 256.
- LEMOIS. Gigantisme, infantilisme et acromégalie. *Nouv. Icon. de la Salpêtr.*, No. 1, 1911, p. 1.
- ARTHUR KEITH. An Inquiry into the Nature of the Skeletal Changes in Acromegaly. *Lancet*, April 15, 1911, p. 993.
- ORHAN. De l'acromégalie. Revue générale et étude critique. (Thèse.) Montpellier: Firman, Montano et Sicardi, 1911.
- Paramyoclonus Multiplex.**—HEILIG. Zur Kasuistik des Paramyoclonus multiplex. *Arch. f. Psychiat.*, Bd. 48, H. 1, 1911, S. 178.
- Hydrophobia.**—M'LAUGHLIN. Rabies. *N.Y. Med. Journ.*, April 8, 1911, p. 677.
- Tetanus.**—SALUS. Ueber Augenmuskelerkrankungen bei Tetanus. *Klin. Monatsbl. f. Augenheilk.*, März 1911, S. 322.
- Alcoholism, etc.**—WOHLWILL. Das Verhalten des Blutdrucks im Delirium tremens. *Arch. f. Psychiat.*, Bd. 48, H. 1, 1911, S. 147.
- MINOR. Zahlen und Beobachtungen aus dem Gebiete des Alkoholismus. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 4, H. 4, 1911, S. 588.
- MARCHIAFAVA, BIGNAMI, und NAZARI. Ueber System-Degeneration der Kommissurbahnen des Gehirns bei chronischem Alkoholismus. (Schluss.) *Monatsschr. f. Psychiat. u. Neurol.*, April 1911, S. 315.
- GRUBER. Der Alkoholismus. Leipzig: Teubner, 1911. M. 1.
- M'KELVIE BELL. Morphinism and Morphinomania. *N.Y. Med. Journ.*, April 8, 1911, p. 680.

SPECIAL SENSES AND CRANIAL NERVES—

- JAMES TAYLOR. Some Ocular and Visual Conditions in Medical Cases. *Lancet*, April 22, 1911, p. 1064.
- POULARD. Hémianopsie. *Journ. des Prat.*, No. 16, 1911, p. 241.
- J. v. KRIES. Ueber die Funktionsteilung im Sehorgan und die Theorie der Nachtblindheit. *Klin. Monatsbl. f. Augenheilk.*, März 1911, S. 241.
- MAMOURIAN. The Mechanical Etiology of Optic Neuritis. *Brit. Med. Journ.*, April 8, 1911, p. 807.
- HETT and HENDERSON. Retro-Bulbar Neuritis and Nasal Obstruction. *Ophthalm. Rev.*, April 1911, p. 107.
- LAPERSONNE. Le Syndrome de la Névrite optique associée à Myélite. Ophtalmo-neuro-myélite. (Soc. de neurol.) *Rev. Neurol.*, No. 6, 1911, p. 378.
- ASSICOT. Sur un cas de névrite optique hémorragique. Paris: Impr. Nationale, 1911.
- LENOBLE et AUBINEAU. Le nystagmus-myoclonie. *Rev. de Med.*, No. 3, 1911, p. 209.
- PURTSCHER. Einseitige komplette Okulomotoriuslähmung bei einem Säugling. *Wien. klin. Wchnschr.*, Nr. 14, 1911, S. 494.
- MARINA, OBLATH o DANELON. Studii sperimentali sui movimenti laterali dei bulbi oculari. *Ann. di Neurol.*, Anno 28, F. 6, 1910, p. 370.
- STEVENS. A Series of Studies of Nervous Affections in Relation to the Adjustments of the Eyes. *N.Y. Med. Journ.*, April 5, 1911, p. 665.
- CHARPENTIER et JUMENTIÉ. Quelques malades présentant un signe d'Argyll-Robertson unilatéral. (Soc. de neurol.) *Rev. Neurol.*, No. 6, 1911, p. 382.
- MOLEEN. Facial Hemiatrophy. *Journ. Nerv. and Ment. Dis.*, March 1911, p. 152.
- OPPENHEIM. Ueber Dauerschwindel (Vertigo permanens). *Monatsschr. f. Psychiat. und Neurol.*, April 1911, S. 275.

MISCELLANEOUS SYMPTOMS AND CASES—

- BLONDEL. La Scatophilie. *Journ. de Neurol.*, mars 5, 1911, p. 90.
- FAUCONNIER. Sur le demographisme et son valeur diagnostique. *Journ. de Neurol.*, fév. 20, 1911, p. 63.
- KANERA. Herpes zoster und Nierenholik. *D. med. Wchnschr.*, Nr. 14, 1911, S. 638.

- ALEXANDER. Report on a Case of Sleeping Sickness. *Journ. Trop. Med.*, Feb. 1911, p. 49.
- PRESSLICH. Zur Kasuistik der Hemihyperidrosis und paradoxen Schweisssekretion. *Wien. med. Wchnschr.*, Nr. 17, 1911, S. 1102.
- GODLEE. Myositis Ossificans Traumatica. *Lancet*, March 25, 1911, p. 791.
- MAKINS. On Traumatic Myositis Ossificans. *Lancet*, March 25, 1911, p. 792.
- HANDELSMAN. Über die neurotonische elektrische Reaktion. (Ein Fall von Syringomyelie mit neuro- und myotonischer Reaktion). *Neurol. Centralbl.*, Nr. 8, 1911, S. 418.
- MOREIRA. Formos benignas de leprose nervosa. *Arch. Brasil. de Med.*, Fev. 1911, p. 157.
- FONSECA. Sobre un caso de paralysis alterna. *Arch. Brasil. de Med.*, Fev. 1911, p. 184.
- BLUMFELD. Nasal Reflex during Anaesthesia. (Section of Anaesthetics.) *Proc. Roy. Soc. of Med.*, March 1911, p. 27.
- FITZWILLIAMS. Congenital Absence of the Pectoral Muscles. (Section for Diseases of Children.) *Proc. Roy. Soc. of Med.*, March 1911, p. 79.
- CARR. Anorexia Nervosa. (Section for Diseases of Children.) *Proc. Roy. Soc. of Med.*, March 1911, p. 80.
- CONSTANTINI. Considérations sur la valeur morphologique de la polydactylie. *Nouv. Icon. de la Sculp.*, No. 1, 1911, p. 81.
- MAILLARD et LE MAUX. Dyskinésie professionnelle chez un facteur. (Soc. de Psychiat.) *L'Encéphale*, No. 4, 1911, p. 361.
- GODLEE and WILLIAMS. Notes on Some Victims of a Recent Railway Accident, with Special Reference to Cerebral Fat-Embolism. *Lancet*, April 22, 1911, p. 1062.
- DÜBEN. Crania pallonica. Jena: Fischer, 1911. M. 30.
- CHEVALLIER. Contribution à l'étude sur l'insuffisance vertébrale. (Thèse.) Paris: Maulde, Doumec et Cie, 1911.
- LOEPER. Troubles nerveux et oxalurie. *Prog. Méd.*, No. 14, 1911, p. 169.
- LANNOIS, PINARD, et GALLAIS. Syndrome adiposo-génital avec hypertrichose, troubles nerveux et mentaux d'origine surrénale. *Gaz. des Hôp.*, No. 43, 1911, S. 649.
- MAGNUS-LEVY. Intermittierendes Hinken und Rückenmarkserkrankung nach Vergiftung mit Extractum filicis maris. *Berl. klin. Wchnschr.*, No. 13, 1911, S. 561.
- BRÉMOND et DOR. Les paralysies récurrentielles. *Gaz. des Hôp.*, No. 38, 1911, p. 569.
- LOP. Fracture ouverte du Crane, de la région occipitale avec issue de la substance cérébrale. *Gaz. des Hôp.*, No. 34, 1911, p. 511.
- DANA. Interpretation of Pain and the Dysesthesias. *Journ. Amer. Med. Assoc.*, No. 11, 1911, p. 787.
- ALFRED GORDON. Diagnostic Value of the Paradoxical Reflex. *Journ. Amer. Med. Assoc.*, No. 11, 1911, p. 805.
- MARINESCO et STANESCO. L'action des anesthésiques et des narcotiques sur les fibres nerveuses vivantes. *Compt. rend. de la Soc. de Biol.*, No. 14, 1911, p. 608.

PSYCHIATRY

- GODDARD. Heredity of Feeble-mindedness. *Eugenics Rev.*, April 1911, p. 46.
- SOLOMON. A Hurried Bird's-Eye View of the Problem of the Modern Care of the Insane. *N. Y. Med. Journ.*, April 1911, p. 611.
- F. W. MOTT. Alcohol and Insanity. *Med. Press*, April 19, 1911, p. 408.
- STEDMAN. Popular Fallacies about Insanity. *Boston Med. and Surg. Journ.*, March 23, 1911, p. 405.
- MUNRO. Clinical Aspects of Some Varieties of Excitement. *Lancet*, March 25, 1911, p. 801.
- DUPRÉ et LOGRE. Les délires d'imagination. *Journ. de Neurol.*, mars 5, 1911, p. 81.
- DUPRÉ et LOGRE. Les délires d'imagination. Mythomanie delirante. *L'Encéphale*, No. 4, 1911, p. 337.
- FRANCHINI. Le graphique psychométrique de l'attention dans les maladies mentales. *Arch. ital. de Biol.*, T. 14, f. 2, 1911, p. 267.
- CANTOR. Ergebnisse von Assoziationsversuchen mittels blossen Zurufs bei Schwachsinnigen. *Monatsschr. f. Psychiat. u. Neurol.*, April 1911, S. 335.

- VOGT. Idiotie thymica. *Ztschr. f. d. Erforsch. des jugend. Schwachsinn.*, Bd. 4, H. 5-6, 1911, S. 548.
- MORGAN. Psychoses of Child-Bearing. *Med. Rec.*, April 8, 1911, p. 623.
- PARIS. Les Troubles de l'intelligence, de la sensibilité ou de la volonté chez les femmes enceintes. Paris: Maloine, 1911. 2 fr.
- PIANETTA. L'affollamento nei manicomi non è espressione di un aumento della follia. *Riv. ital. di Neuropatol.*, Marzo 1911, p. 113.
- GLUECK. Traumatic Psychoses and Post-Traumatic Psychopathic States. *Journ. Amer. Med. Assoc.*, No. 13, 1911, p. 943.
- BOIDARD. Stéréotypie et collectionnisme chez une délirante chronique non démente. *Rev. de Psychiat.*, mars 1911, p. 110.
- PRIVAT DE FORTUNIE et HANNARD. Un cas de psychose chronique à base d'interprétation, avec délire d'imagination. *Rev. de Psychiat.*, mars 1911, p. 90.
- TINTEMANN. Beobachtungen über Zuckerausscheidungen bei Geisteskranken. *Monatsschr. f. Psychiat. u. Neurol.*, April 1911, S. 294.
- ANGELILLO. La stomatite ulcerativa contagiosa nei malati di mente. *Ann. di Neurol.*, Anno 28, F. 6, 1910, p. 381.
- GEORGE M. ROBERTSON. The Morison Lectures on Insanity. Melancholia, the Depressive Phase of Manic-Depressive Insanity. *Lancet*, April 1, 1911, p. 865.
- G. M. ROBERTSON. Some Medico-Legal and Practical Considerations relating to Melancholia. *Brit. Med. Journ.*, April 8, 1911, p. 800.
- WIENER. Die Reaktion des Paralytikerharns mit Liquor Belostii. *Prag. med. Wchnschr.*, Nr. 15, 1911, S. 191.
- STUCKEN. Ueber eine angeblich für progressive Paralyse charakteristische Reaktion im Harn (mit Liquor Bellostii). *Munch. med. Wchnschr.*, No. 16, 1911, S. 855.
- LEVY. L'agoraphobie et son traitement éducatif en cure libre. *Prag. med.*, No. 16, 1911, p. 193.
- PICK. Les troubles psychopathiques des modes de l'expression. (Suite et fin.) *Arch. de Neurol.*, avril 1911, p. 216.
- ISSERLIN. Nachtrag zu meinem Aufsatz: Ueber die Beurteilung von Bewegungsstörungen bei Geisteskranken. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 4, H. 4, 1911, S. 617.
- DELMAS. Simulation présumée d'un délire de grandeur chez un débile. (Soc. de neurol.) *L'Encéphale*, No. 4, 1911, p. 370.
- MARRO. I fattori cerebrali dell' omicidio e la profilassi educative (Seguito). L'automatismo impulsivo. *Ann. di Freniat.*, Dic. 1910, p. 289.
- BELLINI. La Contrattura Palmare, fenomeno concomitante di alcune psicopatie. *Ann. di Freniat.*, Dic. 1910, p. 319.
- KILIAN. Zur Untersuchungen der Assoziationen bei Maniakalischen. *Klinik f. psychis. u. nerv. Krankh.*, Bd. 6, H. 1, 1911, S. 28.
- ROXO. Da vontade nos alienados. *Arch. Brasil. de Med.*, Fev. 1911, p. 123.
- KATZEN-ELLENBOGEN. The Detection of a Case of Simulation of Insanity by Means of Association Tests. *Journ. Abnorm. Psychol.*, April-May 1911, p. 19.
- BÜTTNER. Fürsorgebestrebungen in den Hilfsschulen. *Ztschr. f. d. Erforsch. des jugend. Schwachsinn.*, Bd. 4, H. 5-6, 1911, S. 496.
- FÜRSTENHEIM. Zur Frage der gesetzlichen Fürsorge für geistig-schwächliche und kränkliche Kinder. *Ztschr. f. d. Erforsch. des jugend. Schwachsinn.*, Bd. 4, H. 5-6, 1911, S. 485.
- MÖNKEMÖLLER. Die geistigen Abnormitäten bei schulpflichtigen Fürsorgezöglingen und ihre Behandlung. *Ztschr. f. d. Erforsch. des jugend. Schwachsinn.*, Bd. 4, H. 5-6, 1911, S. 431.
- MARKUS. Ueber Assoziationen bei Dementia praecox. *Arch. f. Psychiat.*, Bd. 48, H. 1, 1911, S. 344.
- BARBÉ et GUICHARD. Démence précoce ou psychose périodique. (Soc. de Psychiat.) *L'Encéphale*, No. 4, 1911, p. 365.
- PASTUREL. Dessins anatomiques et conceptions médicales d'un dément précoce. *L'Encéphale*, No. 4, 1911, p. 358.
- FALCIOLA. Sulla eziologia e patogenesi della demenza precoce. *Ann. di Freniat.*, Dic. 1910, p. 367.

- DILLER. Report of a Juvenile Case of Paresis. *Cleveland Med. Journ.*, March 1911, p. 221.
- CURRAN POPE. An Instructive Case of Syphilis, followed by Paresis. *N.Y. Med. Journ.*, April 15, 1911, p. 727.
- DUPRÉ et FOUQUE. Paralyse générale infantile. (Soc. de Psychiat.) *L'Encéphale*, No. 4, 1911, p. 367.
- BELLINI. Contributo clinico alla Paralisi progressiva giovanile. *Ann. di Freniat.*, Dic. 1911, p. 353.
- PILCZ. Zur Prognose und Therapie der Paralysis progressiva. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 4, H. 4, 1911, S. 457.
- FISCHER. Ueber die Aussichten einer therapeutischen Beeinflussung der progressiven Paralyse. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 4, H. 4, 1911, S. 482.
- LAIGNEL-LAVASTINE et PITULESCU. Lésions neuro-fibrillaires du cervelet des paralytiques généraux. (Soc. de Psychiat.) *L'Encéphale*, No. 4, 1911, p. 370.
- DRYSDALE. The Mental Hospital of the Future. *Cleveland Med. Journ.*, March 1911, p. 186.
- SCHULTZE. Die Sicherung der Gesellschaft gegen gemeingefährliche Geistes- kranke und der Vorentwurf zu einem Deutschen Strafgesetzbuch. *Arch. f. Psychiat.*, Bd. 48, H. 1, 1911, S. 1.
- HUDOVERNIG. Der Entwurf des neuen ungarischen Irrengesetzes. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 4, H. 4, 1911, S. 494.
- FENNING. The Discharge of Lunatics by Habeas Corpus Proceedings. *Journ. Amer. Med. Assoc.*, No. 7, 1911, p. 489.
- RUPPRECHT. Straffällige Jugend und psychopathische Minderwertigkeit. *Münch. med. Wchnschr.*, No. 14, 1911, S. 742.

TREATMENT *

- LEWANDOWSKY. Erfolgreiche Trepanationen ohne Befund. *Therap. Monatsh.*, April 1911, S. 235.
- STERTZ. Ueber periodisches Schwanken der Hirnpunktion. *Arch. f. Psychiat.*, Bd. 48, H. 1, 1911, S. 199.
- RUSSELL FOWLER. Principles underlying the Surgery of the Spinal Cord and Nerve Roots, Indications for Operative Interference in Injuries of the Spinal Cord, etc. *Med. Rec.*, March 25, 1911, p. 523.
- BORCHARDT. Zur Technik der Hirnpunktion. *Berl. klin. Wchnschr.*, No. 13, 1911, S. 570.
- SOUQUES et DE MARTEL. De la mort rapide à la suite des Craniectomies décompressives. (Soc. de neurol.) *Rev. Neurol.*, No. 6, 1911, p. 377.
- PASHAYAN. What is Psychotherapy? *Albany Med. Ann.*, April 1911, p. 187.
- ALFRED GORDON. Psychoanalysis as a New Therapeutic Procedure in Psycho- neuroses. *N.Y. Med. Journ.*, April 8, 1911, p. 669.
- DONLEY. Psychotherapy and Re-education. *Journ. Abnorm. Psychol.*, April-May 1911, p. 1.
- BERNHEIM. De la psychothérapie dans les psychoses. (Soc. de Psychiat.) *L'Encéphale*, No. 4, 1911, p. 375.
- BAJANOFF et OSSIPOFF. La Suggestion et ses Limites. Paris: Bloud et Cie, 1911. 1 fr. 50.
- MARCUS. Ehrlich-Hata behandlingen vid syfilitiska synkdomar i nervosystemet. *Upsala Lakar. Förhand.*, mars 21, 1911, S. 303.
- GITHENS and MELTZER. The Control of Strychnine Poisoning by Means of Intratracheal Insufflation and Ether. *Journ. Pharmacol.*, March 1911, p. 357.
- LOEWENSTEIN. Zur Behandlung der progressiven Paralyse mit Nuclein- säureinjektionen. *Berl. klin. Wchnschr.*, No. 16, 1911, S. 714.
- HERZ. Ueber die psychische Aetiologie und Therapie der Arteriosklerose. *Wien. klin. Wchnschr.*, Nr. 14, 1911, S. 484.
- HOFBAUER. Zur Behandlung der Asthma bronchiale (nervosum). *Med. Bl.*, Nr. 7, 1911, S. 73.

* A number of references to papers on Treatment are included in the Bibliography under the Individual Diseases.

- MOLL. Die Behandlung sexueller Perversionen mit besonderer Berücksichtigung des Assoziationstherapie. *Ztschr. f. Psychother.*, Bd. 3, H. 1, 1911, S. 1.
- PETZ. Ueber das neue Sedativum und Hypnoticum "Adalin." *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 4, H. 4, 1911, S. 515.
- HENNES. Ueber Adalinwirkung bei Neurosen und Psychosen. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 4, H. 4, 1911, S. 507.
- CRON. Heilpädagogische Technik und Wertarbeit. *Ztschr. f. d. Erforsch. des jugend. Schwachsinn.*, Bd. 4, H. 5-6, 1911, S. 516.
- HENSER. Zur Neurotropie und Depotwirkung des Salvarsans. *Med. Klinik*, No. 15, 1911, S. 567.
- BENARIO. Zur Statistik und Therapie der Neurorezidive unter Salvarsanbehandlung. *Münc. med. Wchenschr.*, No. 14, 1911, S. 732.
- A. G. HAY. Additional Notes on the Treatment of Sciatica by Means of Saline Injections. *Glasgow Med. Journ.*, April 1911, p. 256.

Bibliography

ANATOMY

- JOHN CAMERON. Lamina Terminalis and its Relation to the Fornix System. *Journ. Anat. and Physiol.*, April 1911, p. 211.
- ORTON. Note on an Anomaly of the Postcentral Sulcus simulating the double Rolandic of Giacomini. *Anat. Rec.*, April 20, 1911, p. 179.
- C. T. VAN VALKENBURG. Zur Kenntnis der Radix spinalis nervi trigemini. *Monatsschr. f. Psychiat. u. Neurol.*, Mai 1911, S. 407.
- SYMINGTON. The Relations of the Main Divisions of the Trifacial Nerve. *Journ. Anat. and Physiol.*, April 1911, p. 183.
- J. RYLAND WHITAKER. Anatomy of the Brain and Spinal Cord. Fourth edition. Edinburgh: E. & S. Livingstone, 1911.
- FEIST - WOLLHEIM. Ueber aufsteigende sekundäre Degenerationen der Hinter- und Seitenstränge im Anschluss an einen Fall von Querschnittserkrankung des Cervicalmarks. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 5, H. 1, 1911, S. 39.
- JELĘSKA - MACIESZYNA. Auf- und absteigende Bahnen des hinteren Vierhügels beim Kaninchen. *Neurol. Centralbl.*, Nr. 9, 1911, S. 473.
- BALASSA. Beitrag zur Markreife des menschlichen Gehirns. *Neurol. Centralbl.*, Nr. 7, 1911, S. 354.
- HOWARD MUMMERY. A Short Preliminary Note on the Distribution of the Nerve-fibres of the Dental Pulp. *Proc. Roy. Soc. of Med.* (Odontol. Section), April 1911, p. 51.
- WILLIAMINA ABEL. The Topography of the Cerebral Cortex of the Guinea-Pig. *Proc. Roy. Soc. of Edin.*, Vol. xxxi., Part 3, 1911, p. 397.
- ÉDOUARD WILLEMS. Localisation Motrice et Kinesthésique. Les noyaux masticateur et mésentéphalique du trijumeau chez le lapin. *Névrose*, Vol. xii., f. 1-2, 1911, p. 5.
- ALBERT KUNTZ. The Development of the Sympathetic Nervous System in Certain Fishes. *Journ. Comp. Neurol.*, No. 2, 1911, p. 177.

PHYSIOLOGY

- GALANTE e RYNBERK. Sulla eccitabilità della corteccia cerebrale nei cani neonati. *Riv. di Patol. nerv. e ment.*, Aprile 1911, p. 256.
- HERZOG. Zur Physiologie der Fingerbewegungen. *D. Ztschr. f. Nervenheilk.*, Bd. 41, H. 4-6, 1911, S. 406.
- KEHRER. Über die Lage der für die Innervation des Vorderarms und der Hand bestimmten Fasern in der Pyramidenbahn des Menschen. *D. Ztschr. f. Nervenheilk.*, Bd. 41, H. 4-6, 1911, S. 430.
- BAUDOUIN et FRANÇAIS. Sur la mesure de la force musculaire dans les divers segments du corps. Description d'un nouvel appareil dynamométrique; chiffres chez le sujet normal. *Rev. Neurol.*, No. 8, 1911, p. 469.
- DONALDSON. The Effect of Underfeeding on the Percentage of Water, on the Ether-Alcohol Extract, and on Medullation in the Central Nervous System of the Albino Rat. *Journ. Comp. Neurol.*, No. 2, 1911, p. 139.
- SYMES and VELEY. The Effect of some Local Anæsthetics on Nerve. *Proc. Roy. Soc.*, Series B, Vol. lxxxiii., No. B566, 1911, p. 421.
- SHERINGTON and SOWTON. Reversal of the Reflex Effect of an Afferent Nerve by altering the Character of the Electrical Stimulus Applied. *Proc. Roy. Soc.*, Series B, Vol. lxxxiii., No. B566, 1911, p. 435.

PSYCHOLOGY

- HAVELOCK ELLIS. *Studies in the Psychology of Sex*. Vol. vi.: *Sex in Relation to Society*. Philadelphia: F. A. Davis Co., 1911. \$3.
- HELLER. *Ueber Psychologie und Psychopathologie des Kindes*. 4 Vorträge. Wien: Heller & Co., 1911. M. 1.80.
- ORDAHL. *Consciousness in Relation to Learning*. *Amer. Journ. Psychol.*, April 1911, p. 158.
- CLAPARÈDE. *La Question de la "Mémoire" Affective*. *Arch. de Psychol.*, No. 40, 1911, p. 361.
- FOUCAULT. *Étude expérimentale sur l'Association de Ressemblance*. *Arch. de Psychol.*, No. 40, 1911, p. 338.
- VAN GENNEP. *Dessins d'Enfant et Dessin Préhistorique*. *Arch. de Psychol.*, No. 40, 1911, p. 326.
- CRAMAËSSEL. *Le Sommeil d'un petit enfant*. *Arch. de Psychol.*, No. 40, 1911, p. 321.
- FERREE and COLLINS. *Experimental Demonstration of the Binaural Ratio as a Factor in Auditory Localization*. *Amer. Journ. Psychol.*, April 1911, p. 250.
- H. M. CLARKE. *Conscious Attitudes*. *Amer. Journ. Psychol.*, April 1911, p. 214.
- KALLEN. *The Aesthetic Principle in Comedy*. *Amer. Journ. Psychol.*, April 1911, p. 137.
- JENTSCH. *Musik und Nerven*. II.: *Das musikal. Gefühl*. Wiesbaden: Bergmann, 1911. M. 2.80.
- MERKLEN. *Contribution à l'étude de l'émotion dans le jeune âge*. *Journ. de méd.*, No. 19, 1911, p. 375.
- JOSEPH. *The Psychological Explanation of the Development of the Perception of External Objects (III.)*. *Mind*, April 1911, p. 161.

PATHOLOGY

- COSTANTINI. *Le lesioni del nucleo lenticolare in rapporto all' afasia e all' anartria*. *Riv. di Patol. nerv. e ment.*, Aprile 1911, p. 227.
- C. M. BYRNES. *A Study of the Axis-Cylinders in Five Cases of Glioma Cerebri*. *Contributions from Depart. of Neurol., Univ. of Penns.*, Vol. v.
- LAIGNEL-LAVASTINE et PITULESCU. *Lésions des neurofibrilles du cervelet chez les paralytiques généraux*. *L'Encéphale*, No. 5, 1911, p. 451.
- PERUSINI. *Sul valore nosografico di alcuni reperti istopatologici caratteristici per la senilità*. *Riv. ital. di Neuropatol.*, Aprile e Maggio 1911, pp. 145, 195.
- COATS and GRAHAM FORBES. *On the Relation of the Meningococcus Intracellularis to Pseudoglioma*. (Pathol. Section.) *Proc. Roy. Soc. of Med.*, April 1911, p. 242.
- RHEIN. *Cause of Contractures and Spasticity in Cases showing no Demonstrable Lesion of the Pyramidal Tracts, with a Pathological Report of Three Cases*. *Contributions from Depart. of Neurol., Univ. of Penns.*, Vol. v.
- JANIE HAMILTON M'ILROY. *The Independence of Peripheral Sensory Neurons in View of the Results of Experimental Section of the Optic Nerve in the Rabbit*. *Proc. Roy. Soc. of Edin.*, Vol. xxxi, Part 3, 1911, p. 349.
- ROSSI. *Sulla rigenerazione del sistema nervoso*. *Riv. di Patol. nerv. e ment.*, Aprile 1911, p. 193.
- DOLLEY. *Studies on the Recuperation of Nerve Cells after Functional Activity from Youth to Senility*. *Journ. Med. Research*, April 1911, p. 309.
- DEMAYE. *Considérations anatomo-pathologiques et pathogéniques sur les maladies mentales*. *Prog. Méd.*, No. 17, 1911, p. 209.
- PICK. *Ueber die senile Atrophie am Hundeschädel*. *Berl. klin. Wchnschr.*, Nr. 18, 1911, S. 797.
- CIACCIO. *Beitrag zur Kenntnis der sogenannten Körnchenzellen des Zentralnervensystems*. *Ziegler's Beit. z. path. Anat.*, Bd. 50, H. 2, 1911, S. 317.

- KOCHER. Die pathologisch-anatomischen Veränderungen des Gehirns bei *Cysticercus racemosus*. *Ziegler's Beit. z. path. Anat.*, Bd. 50, H. 2, 1911, S. 338.
- HOOK. Ein Ganglioneurom der Nebenniere, zugleich ein Beitrag zur Lehre der Ganglioneurome. *Frankfurt. Ztschr. f. Pathol.*, Bd. 7, H. 1, 1911, S. 135.
- VOUWILLER. Ueber das Epithel und die Geschwülste der Hirnkammern. *Virchow's Arch.*, Bd. 204, H. 2, 1911, S. 230.
- ZALLA. La degenerazione e la rigenerazione dei nervi periferici nei conigli tiroidectomizzati. *Ric. di Patol. nerv. e ment.*, Aprile 1911, p. 214.
- SWARTS and THOMPSON. Accessory Thyroid Tissue within the Pericardium of the Dog. *Journ. Med. Research*, April 1911, p. 299.
- THOMPSON. Two Cases of Tumour Metastases involving the Parathyroid Glandules. *Journ. Med. Research*, April 1911, p. 291.

CLINICAL NEUROLOGY

GENERAL—

- BERGMANN. Selbstbefreiung aus nervösen Leiden. Freiburg: Herder, 1911. M. 3.30.
- SIR THOMAS OLIVER. A Lecture on Lead Poisoning and the Race. *Brit. Med. Journ.*, May 13, 1911, p. 1096.
- DERCUM. The Role of Dreams in Etiology. *Journ. Amer. Med. Assoc.*, May 13, 1911, p. 1373.
- DEJERINE. Clinique des Maladies du Système nerveux. Leçon inaugurale. Paris: Masson et Cie, 1911.

MUSCLES—

- F. E. BATTEN. Simple Atrophic Type of Myopathy: so-called "Myatonia Congenita" or "Amyotonia Congenita." (Section for Disease in Children.) *Proc. Roy. Soc. of Med.*, April 1911, p. 100.
- LANGMEAD. A Case of Myopathy (? Affection of the Facial Muscles). (Section for Disease in Children.) *Proc. Roy. Soc. of Med.*, April 1911, p. 109.
- CASTOR. Three Cases of Pseudo-muscular Hypertrophy in one Family. *Indian Med. Gaz.*, April 1911, p. 127.
- MAKINS. Traumatic Myositis Ossificans. (Surg. Section.) *Proc. Roy. Soc. of Med.*, April 1911, p. 133.
- GODLEE. Myositis Ossificans Traumatica. (Surg. Section.) *Proc. Roy. Soc. of Med.*, April 1911, p. 144.
- W. B. JACK. Three Cases of Peroneal Paralysis. *Practitioner*, April 1911, p. 586.
- LEONARD GUTHRIE. Two Cases of Muscular Atrophy of the Peroneal Type (Charcot, Marie, Tooth) in Father and Son. (Clin. Section.) *Proc. Roy. Soc. of Med.*, April 1911, p. 126.

NERVES—

- YAWGER. Sciatica as caused by "Rheumatic" Myositis in the Gluteal Region: its Diagnosis and Treatment. *Contributions from Depart. of Neurol., Univ. of Penns.*, Vol. v.
- LABORDERIE. Sur un cas de sciatique traitée par l'électrolyse de l'hyposulfite de soude. *Arch. de l'Élect. méd.*, mai 10, 1911, p. 399.
- SIMERAY. De la forme fruste de la coxalgie. (*Thèse.*) Paris: Steinheil, 1911.
- CLAUDE et VELTER. Les troubles trophiques ostéo-articulaires dans le zona et les névrites radiculaires. *L'Encéphale*, No. 5, 1911, p. 420.
- BONNAMOUR et ROUBIER. Polynévrite consécutive à une intoxication par le sel d'oseille. Paris: Levé, 1911.
- RABINOVICI. Du neuro-fibrome des paupières (Neuro-fibrome, Névrome plexiforme, Molluscom fibrosum, etc. (*Thèse.*) Nancy: Barbier, 1911.
- BOULENGER. Un cas de maladie de Recklinghausen. *Journ. de Neurol.*, mars 20, 1911, p. 103.

- STENER. Ein seltener Fall von Herpes zoster gangraenosus generalisatus. *Wien. med. Wchnschr.*, Nr. 18, 1911, S. 1167.
- ROSENBERG. Nierensteinkolik, Head'sche Zone und Herpes zoster. *D. med. Wchnschr.*, Nr. 17, 1911, S. 788.

SPINAL CORD—

- GREIDENBERG. Contribution à l'étude de l'hémilésion de la moelle épinière. (Suite et fin.) *Arch. de Neurol.*, mai 1911, p. 284.
- H. OPPENHEIM. Ataxia spinalis chronica infantilis et congenita (angeborene und früherworbene Hinterstrangdegeneration). *Neurol. Centralbl.*, Nr. 9, 1911, S. 466.

Tabes Dorsalis.—HORATIO MATTHEWS. The Vasomotor System in Tabes. *Brit. Med. Journ.*, May 13, 1911, p. 1104.

COLLIER and LOCKHART MUMMERY. A Case of Tabes Dorsalis, with early Rectal Crises. (Clin. Section.) *Proc. Roy. Soc. of Med.*, April 1911, p. 117.

S. LEOPOLD. Sacral Tabes: a Case with Necropsy. *Contributions from Depart. of Neurol., Univ. of Penns.*, Vol. v.

THOMAS et BARRE. Influence heureuse du traitement mercuriel sur l'Arthropathie des tabétiques. (Soc. de neurol.) *Rev. Neurol.*, No. 8, 1911, p. 522.

MAILLARD et BLONDEL. Hérédosyphilis; tabes fruste avec diminution intellectuelle. (Soc. de Psychiat.) *L'Encéphale*, No. 5, 1911, p. 486.

SOUQUES. Inversion du Réflexe tendineux du Triceps Brachial dans l'Hémiplégie associée au Tabes. (Soc. de neurol.) *Rev. Neurol.*, No. 8, 1911, p. 510.

STRÜMPPELL. Pathologie und Behandlung der Tabes dorsalis. *Wien. med. Wchnschr.*, Nr. 19, 1911, S. 1214.

BECKER. Förstersche Operation bei tabischen gastrischen Krisen. *Med. Klinik*, Nr. 20, 1911, S. 775.

Poliomyelitis Anterior Acuta.—ALAN G. BROWN. A Skin Eruption in Six Consecutive Cases of Poliomyelitis. *Pediatrics*, April 1911, p. 229.

RÖMER. Die epidemische Kinderlähmung. (Heine-Medin'sche Krankheit). Berlin: Springer, 1911. M. 24.

BULKLEY. Poliomyelitis and Rabies. On the Treatment of Epithelioma, etc., with Thorium Paste. *Med. Rec.*, April 22, 1911, p. 708.

NETTER, GENDRON, et TOURAINE. Sérothérapie de la poliomyélite antérieure aiguë (deuxième et troisième notes). *Compt. rend. de la Soc. de Biol.*, Nos. 16 and 17, 1911, pp. 707, 739.

ANDERSON and FROST. The Diagnosis of Abortive Cases of Poliomyelitis by the Demonstration of Specific Antibodies. *Proc. Soc. for Experimental Biol.*, Vol. viii., No. 3, 1911, p. 54.

FEISS. Recent Experimental Work on the "Fusion" of Nerves and its Practical Bearing on Infantile Paralysis. *Boston Med. and Surg. Journ.*, May 11, 1911, p. 667.

STRUNSKY. Miniature Exercise Machine for Infantile Paralysis. *Journ. Amer. Med. Assoc.*, April 29, 1911, p. 1259.

W. G. SPILLER. Thrombosis of the Cervical Anterior Median Spinal Artery: Syphilitic Acute Anterior Poliomyelitis. *Contributions from Depart. of Neurol., Univ. of Penns.*, Vol. v.

Amyotrophic Lateral Sclerosis.—SIMONS. Crampi bei amyotrophischer Lateralsklerose. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 5, H. 1, 1911, S. 23.

Tumours.—BÖNNIGER und ADLER. Intraduraler Konglomeratuberkel des Rückenmarks; Operation; erhebliche Besserung. *Med. Klinik*, Nr. 18 u. 19, 1911, Sn. 679, 723.

FRICK. Ueber ein Teratom des Rückenmarks. *Frankfort Ztschr. f. Pathol.*, Bd. 7, H. 1, 1911, S. 127.

BOVAIRD and SCHLAPP. An Extra-medullary Tumour of the Spinal Cord, apparently caused by Trauma. *Journ. Nerv. and Ment. Dis.*, April 1911, p. 221.

Spine.—T. D. LUKE. Three Cases of Malignant Disease of the Spine. *Brit. Med. Journ.*, April 29, 1911, p. 988.

- Cerebro-spinal Fluid.**—CHARDON. Envahissement massif du liquide céphalo-rachidien par des micro-organismes et absence de réactions cellulaires au cours de méningites cérébro-spinales. Paris: Vigot Frères, 1911. 1 fr. 50.
- HOHN. Der Befund der Lumbalflüssigkeit bei tuberkulöser Meningitis. *Berl. klin. Wchnschr.*, No. 18, 1911, S. 792.
- HARTWICH. Bacterium coli im Liquor cerebro-spinalis. *Berl. klin. Wchnschr.* No. 18, 1911, S. 795.
- STROUSE. Diagnostic Value of the Butyric Acid Test (Noguchi) in the Cerebro-spinal Fluid. *Journ. Amer. Med. Assoc.*, April 22, 1911, p. 1171.
- CASTAIGNE et WEILL. Considérations pratiques d'ordre clinique et thérapeutique sur le liquide céphalo-rachidien des urémiques. Paris: Poinat, 1911.

BRAIN—

- REICHARDT. Todesarten und Todesursachen bei Gehirnkrankheiten. Jena: Fischer, 1911. M. 3.
- D'ESPINE. Hémorragie méningée sous-arachnoïdienne inférieure. *Presse méd.*, Nr. 39, 1911, p. 401.
- Meningitis.**—S. LEOPOLD. Serous Meningitis. *Contributions from Depart. of Neurol., Univ. of Penns.*, Vol. v.
- DEBRÉ. Recherches épidémiologiques cliniques et thérapeutiques sur la méningite cérébro-spinale. Paris: F. Alcan, 1911.
- ROLLY. Ueber die Prognose und den Verlauf der Pneumokokkenmeningitis. *D. med. Wchnschr.*, Nr. 17, 1911, S. 774.
- Softening.**—GRÜNWARD. Zur Kenntnis der Thrombose der Arteria profunda cerebri. *D. Ztschr. f. Nervenheilk.*, Bd. 41, H. 4-6, 1911, S. 485.
- Little's Disease.**—MME. LONG-LANDRY. La Maladie de Little. Étude anatomique et pathogénique. Paris, Delarue, 1911.
- M. et MME. LONG. Sur l'état de la Contracture et sur les Troubles de la motilité volontaire dans la maladie de Little. (Soc. de neurol.) *Rev. Neurol.*, No. 8, 1911, p. 513.
- Tuberose Sclerosis.**—FISCHER. Die Nierentumoren bei der tuberösen Hirn-sklerose. *Ziegler's Beiträge z. path. Anat.*, Bd. 50, H. 2, 1911, S. 235.
- Hæmorrhage.**—SOUQUES. Hémorragie Cérébrale récents à foyers multiples. (Soc. de neurol.) *Rec. Neurol.*, No. 8, 1911, p. 512.
- LUDLAM. Distribution of Encephalitic Hæmorrhages. *Contributions from Depart. of Neurol., Univ. of Penns.*, Vol. v.
- DUCROTOY. Contribution à l'étude des hémorrhagies du système nerveux central des nouveau nés. Paris: Steinheil, 1911.
- Hemiplegia.**—NOICA. Sur les mouvements associés du membre inférieur malade chez les hémiplegiques organiques. *Rec. Neurol.*, No. 7, 1911, p. 418.
- CACCIAPUOTI. Sur les mouvements associés du membre inférieur malade chez les hémiplegiques organiques. *Rec. Neurol.*, No. 7, 1911, p. 416.
- BAUDOUIN et FRANÇAIS. Étude dynamométrique de quelques groupes musculaires chez les hémiplegiques. (Soc. de neurol.) *Rec. Neurol.*, No. 8, 1911, p. 528.
- ARMAND-DELILLE. Débilité motrice congénitale pure, sans débilité psychique, chez un hémiplegique infantile. (Soc. de neurol.) *Rec. Neurol.*, No. 8, 1911, p. 518.
- CHARLES R. BOX. The Syphilitic Factor in the Hemiplegias and Diplegias of Infancy and Childhood. *Brit. Med. Journ.*, April 29, 1911, p. 982.
- Tumours.**—GATTI. Tumori cerebrali e sintomi psicopatici. *Riv. Ital. di Neuropatol.*, Maggio 1911, p. 214.
- ASTWAZATUROW. Beitrag zur Kasuistik der kavernösen Blutgeschwulst des Gehirns. *Neurol. Centralbl.*, Nr. 7, 1911, S. 363.
- MINGAZZINI. Tumore del centro ovale fronto-rolandico, della fornix e del corpus callosum. *Riv. di Patol. nerv. e ment.*, Marzo 1911, p. 129.

SCHNITZLER. Zur Symptomatologie der Hypophysentumoren. *D. Ztschr. f. Neuroheilk.*, Bd. 41, H. 4-6, 1911, S. 279.

C. K. MILLS. Flaccid Paralysis or Extreme Hypotonia of the Muscles which poise the Head, and other Symptoms indicative of a Cerebellar Tumour. *Contributions from Depart. of Neurol., Univ. of Penns.*, Vol. v.

W. G. SPILLER. Operations for Brain Tumours. *Contributions from Depart. of Neurol., Univ. of Penns.*, Vol. v.

ALQUIER et KLARFELD. Sur le diagnostic des tumeurs de la protubérance annulaire. *Gaz. des Hôp.*, mai 18, 1911, p. 873.

JEROME B. THOMAS. Case of Choked Disk and Progressive Blindness due to Sarcoma of the Brain. *Journ. Amer. Med. Assoc.*, May 13, 1911, p. 1320.

NEWMARK, KUGLER and SHERMAN. Case of Cerebellar Tumour, and one of Endothelioma of the Dura Mater of the Pre-frontal Region. *Journ. Amer. Med. Assoc.*, April 22, 1911, p. 1180.

GOUGEROT et TROISIER. Tubercules disséminés de l'écorce cérébrale. *Rev. de la Tuberculose*, No. 2, 1911, p. 82.

Syphilis.—D. K. HENDERSON. Diagnosis of Cerebral Syphilis. *Rev. Neurol. and Psychiat.*, May 1911, p. 241.

RHEIN. Mental Symptoms of Syphilis. *Contributions from Depart. of Neurol., Univ. of Penns.*, Vol. v.

Aphasia.—EVA M'CALL. Two Cases of Congenital Aphasia in Children. *Brit. Med. Journ.*, May 13, 1911, p. 1105.

Cerebellum.—FICKLER. Klinische und pathologisch-anatomische Beiträge zu den Erkrankungen des Kleinhirns. *Ztschr. f. Neuroheilk.*, Bd. 41, H. 4-6, 1911, S. 306.

RAUZIER. Tuberculome du cervelet, Paris: Poinat, 1911.

WALKER WOOD. Report of a Case of Thrombosis of the Lateral Sinus exhibiting Symptoms of Cerebellar Abscess; Operation; Recovery, *Journ. Laryngol.*, May 1911, p. 253.

GENERAL AND FUNCTIONAL DISEASES—

G. E. RENNIE. An Address on some Aspects of Functional Derangements of the Nervous System. *Brit. Med. Journ.*, May 13, 1911, p. 1093.

Epilepsy.—L. D. H. BAUGH. Observations on Indoxyl in the Urine of Epileptics: A Preliminary Contribution on Epileptic Metabolism. *Journ. Ment. Sc.*, April 1911, p. 312.

RAMADIER. L'assistance des épileptiques et des idiots en Loir-et-Cher. L'hospice Dessaignes annexe de l'hospice d'aliénés. *Ann. Méd.-Psychol.*, mai-juin 1911, p. 425.

BENTLEY. Epilepsy. *Austral. Med. Gaz.*, No. 3, 1911, p. 121.

Chorea.—COCKAYNE. The Influence of Salicylates on the Cardiac Lesions of Chorea. *Quart. Journ. of Med.*, April 1911, p. 336.

Hysteria.—TOM A. WILLIAMS. Cases illustrating the Origin of Hysterical and Pseudo-hysterical Symptoms. *Med. Press*, May 17, 1911, p. 516.

BECKER. Ueber hysterische Pseudoaphasie. *D. med. Wchnschr.*, Nr. 19, 1911, S. 875.

WEIR MITCHELL. Fat and Blood: The Treatment of Certain Forms of Neurasthenia and Hysteria. Eighth Edition, with Additions. Philadelphia: J. B. Lippincott Co., 1911.

Neurasthenia.—BALLEET. Neurasthenia. Translated from the Third Edition by P. Campbell Smith. London: Kimpton, 1911.

P. E. LÉVY. Inutilité de l'isolement et supériorité de la cure libre dans le traitement de la neurasthénie et des névroses. *Journ. de Neurol.*, avril 8, 1911, p. 121.

VITTOZ. Treatment of Neurasthenia by Teaching of Brain Control. Translated by H. B. Brooke. London: Longmans, Green & Co., 1911. 3s. 6d.

RINGROSE GORE. The Climatic and Balneological Treatment of Neurasthenia. (Balneol and Climatol. Section.) *Proc. Roy. Soc. of Med.*, April 1911, p. 37.

Tetany.—IBRAHIM. Über Tetanie der Sphinkteren, der glatten Muskeln und des Herzens bei Säuglingen. *D. Ztschr. f. Nervenheilk.*, Bd. 41, H. 4-6, 1911, S. 436.

MAREK. Ueber einen Fall von Tetanie nach Adrenalininfektionen bei Osteomalazie. *Wien. klin. Wchnschr.*, Nr. 18, 1911, S. 633.

LUGER. Ein Fall von Tetanieepilepsie. *Wien. klin. Wchnschr.*, Nr. 17, 1911, S. 604.

CHESTER MYLES. Tetany; with an Illustrative Case. *Dublin Journ. Med. Sc.*, May 1, 1911, p. 328.

Exophthalmic Goitre.—PRING and EVANS. A Case of Graves's Disease: Its Treatment, first by Medical Methods and later by Excision of one of the Lobes and the Isthmus of the Thyroid Gland. (Clin. Section.) *Proc. Roy. Soc. of Med.*, April 1911, p. 122.

DAYTON. Treatment of Exophthalmic Goitre with Thyroidectin. *Journ. Amer. Med. Assoc.*, April 22, 1911, p. 1176.

Tetanus.—CAMUS. Traitement du tétanos expérimental par les injections bulbares et parabulbares du sérum antitétanique. *Compt. rend. de la Soc. de Biol.*, No. 16, 1911, p. 689.

Alcoholism, etc.—RANSON and SCOTT. The Results of Medicinal Treatment in 1106 Cases of Delirium Tremens. *Amer. Journ. Med. Sc.*, May 1911, p. 673.

MOLL. Kraepelin's Experimente mit kleinen Alkoholdosen. *Ztschr. f. Psychother.*, Bd. 3, H. 2, 1911, S. 65.

CABOT. The Towns-Lambert Treatment for Morphinism and Alcoholism. *Boston Med. and Surg. Journ.*, May 11, 1911, p. 676.

F. M. BARNES. Pupillary Disturbances in the Alcoholic Psychoses. *N.Y. Med. Journ.*, May 13, 1911, p. 928.

CROTHERS. The Significance of a History of Alcoholic Addiction. *Med. Rec.*, April 29, 1911, p. 770.

SPECIAL SENSES AND CRANIAL NERVES—

O. K. WILLIAMSON. A Case of Secondary Optic Atrophy due to a (?) Cerebellar Tumour. (Section for Disease in Children.) *Proc. Roy. Soc. of Med.*, April 1911, p. 109.

H. OPPENHEIM. Bemerkung zur Prüfung der Pupillarlichtreaktion. *Neurol. Centralbl.*, Nr. 7, 1911, S. 362.

SCHUSTER. Zu der "Bemerkung zur Prüfung der Pupillarlichtreaktion" von Herrn Prof. Oppenheim. *Neurol. Centralbl.*, Nr. 9, 1911, S. 472.

LANDOLT. Paralysie de l'Élévation volontaire des Yeux et des Paupières, avec conservation de l'élévation automatico-réflexe. (Soc. de neurol.) *Rev. Neurol.*, No. 8, 1911, p. 505.

SICARD et BLOCH. Bispasme Facial. (Soc. de neurol.) *Rev. Neurol.*, No. 8, 1911, p. 507.

DIVE. A Case of Bilateral Peripheral Facial Palsy. *Journ. Roy. Army Med. Corps*, May 1911, p. 561.

DEGAND. Observations sur un Enfant Sourd. *Arch. de Psychol.*, No. 40, 1911, p. 378.

FRÖSCHELS. Über Taubstumme und Hörstumme. Wien: Urban & Schwarzenberg, 1911. M. 2.50.

LERMOYEZ et HAUTANT. Le nystagmus vestibulaire calorique. *Presse méd.*, No. 36, 1911, p. 361.

FETTEROLF and NORRIS. The Anatomical Explanation of the Paralysis of the left Recurrent Laryngeal Nerve found in certain Cases of Mitral Stenosis. *Amer. Journ. Med. Sc.*, May 1911, p. 625.

MISCELLANEOUS SYMPTOMS AND CASES—

SICARD et BLOCH. Maux perforants "idiopathiques." (Soc. de neurol.) *Rev. Neurol.*, No. 8, 1911, p. 506.

KIERNAN. Thumbsucking as an Auto-Erotic Phenomenon. *Pediatrics*, April 1911, p. 197.

GAULTIER et BUQUET. La mâchoire à clignements (Jaw-winking Phenomenon). *Gaz. des Hôp.*, avril 27, 1911, p. 732.

- GAULTIER et BUQUET. La mâchoire à clignements (Jaw-winking Phenomen) ou mouvements involontaires d'élévation palpébrale associés aux mouvements de la mâchoire. (Soc. de neurol.) *Rec. Neurol.*, No. 8, 1911, p. 519.
- BLACH und BAUER. Über Störungen der Temperaturregulierung bei Nervenkrankheiten. Eine Methode für die Funktionsprüfung der Vasomotoren. *D. Ztschr. f. Nervenheilk.*, Bd. 41, H. 4-6, 1911, S. 464.
- SIMONS. Eine seltene Trophoneurose ("Lipodystrophia progressiva"). *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 5, H. 1, 1911, S. 29.
- THOMSEN, BOAS, HJORT, und LESCHLY. Eine Untersuchung der Schwachsinnigen, Epileptiker, Blinden und Taubstummen Dänemarks mit Wassermann's Reaktion. *Berl. klin. Wchnschr.*, Nr. 20, 1911, S. 891.
- POULALION et MEUNIER. Note sur quelques caractéristiques respiratoires dans les accès spontanés de narcolepsie et de convulsions laryngo-diaphragmatiques (psycho-névrose: grande hystérie). *Compt. rend. de la Soc. de Biol.*, No. 17, 1911, p. 755.
- WALTHERD. Ueber den psychogenen Pruritus vulvae und seine Behandlung. *D. med. Wchnschr.*, Nr. 18, 1911, S. 831.
- KLEHMET. Akute Linkshändigkeit bei einem Falle von katatonischer Pforthebephrenie. *Monatsschr. f. Psychiat. u. Neurol.*, Mai 1911, S. 329.
- PFORRINGER. Zum Wesen des katatonischen Symptomenkomplexes. *Monatsschr. f. Psychiat. u. Neurol.*, May 1911, S. 380.
- BORNSTEIN. Untersuchungen über die Atmung des Geistes- und Nervenkranken. IV. Teil: Die Erregbarkeit des Atemzentrums, besonders bei Epileptikern. *Monatsschr. f. Psychiat. u. Neurol.*, Mai 1911, S. 367.
- BERGER. Ueber einen mit Schreibstörungen einhergehenden Krankheitsfall. *Monatsschr. f. Psychiat. u. Neurol.*, Mai 1911, S. 357.
- SCHRODER. Beitrag zur Kenntnis der Fischerschen Plaques im Gehirn und ihrer klinischen Bedeutung. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 5, H. 1, 1911, S. 16.
- DONLEY. Peripheral Neural Atrophy of the Thenar Muscles. *Journ. Amer. Med. Assoc.*, April 29, 1911, p. 1256.
- HEISER. Practical Experiences with Beriberi and Unpolished Rice in the Philippines. *Journ. Amer. Med. Assoc.*, April 29, 1911, p. 1237.
- KNAPP. A Case of Hemiatrophy from Scleroderma. *Boston Med. and Surg. Journ.*, May 11, 1911, p. 671.
- HIRSCHFELD. Über Horror sexualis partialis (sexuelle Teilaversion, anti-fetischistische Zwangsvorstellungen, Fetischhass). *Neurol. Centralbl.*, Nr. 10, 1911, S. 529.
- SALZBERGER. Kasuistische Mitteilungen über einen Eunuchoiden. *Neurol. Centralbl.*, Nr. 10, 1911, S. 542.
- LEY. Deux cas de maladie de sommeil. *Journ. de Neurol.*, mars 20, 1911, p. 101.
- MORLEY FLETCHER. On Oxycephaly. *Quart. Journ. Med.*, April 1911, p. 385.
- OPPENHEIM. Zur Lehre von den neurovaskulären Erkrankungen. *D. Ztschr. f. Nervenheilk.*, Bd. 41, H. 4-6, 1911, S. 376.
- T. TURNER THOMSON. Falling of the Humerus associated with a Dislocation of the Shoulder and Paralysis of the Arm. *Journ. Nerv. and Ment. Dis.*, April 1911, p. 193.
- THROCKMORTON. New Method for eliciting the Extension Toe Reflex. *Journ. Amer. Med. Assoc.*, May 6, 1911, p. 1311.
- FAIRBANKS. Contralateral Plantar Reflex. *Rev. Neurol. and Psychiat.*, May 1911, p. 225.

PSYCHIATRY

- F. W. MOTT. A Lecture on Heredity and Insanity. *Lancet*, May 13, 1911, p. 1251.
- ISADOR H. CORIAT. Abnormal Psychology. London: William Rider & Son, 1911. 5s.
- SCHÖLBERG and EDWIN GOODALL. On the Wassermann Reaction in 172 Cases of Mental Disorder and 66 Control Cases, Syphilitic and Other. *Journ. Ment. Sc.*, April 1911, p. 218.

- ALICE BABINGTON. A Note on the Determination of the Opsonic Indices of the Blood in Insane Persons. *Journ. Ment. Sc.*, April 1911, p. 288.
- HOCHE. Geisteskrankheit und Kultur. Freiburg: Speyer & Kaerner, 1910. M. —90.
- ZINGERLE. Die psychiatrischen Aufgaben des praktischen Arztes. Jena: Fischer, 1911. M. 2.
- ANTON. Psychiatrische Vorträge für Ärzte und Eltern. Berlin: Karger, 1911. M. 2.
- T. S. CLOUSTON. The Diploma in Psychiatry. *Journ. Ment. Sc.*, April 1911, p. 207.
- THÉRY. De la psychiatrie d'urgence. Paris: Steinheil, 1911.
- DEVINE. Abnormal Mental States associated with Malignant Disease. *Journ. Ment. Sc.*, April 1911, p. 348.
- MACKENZIE WALLIS. Metabolism in the Insane. *Journ. Ment. Sc.*, April 1911, p. 327.
- TENISON COLLINS. Notes on Gynæcological Conditions Coincident with Mental Disturbances. *Journ. Ment. Sc.*, April 1911, p. 321.
- BÜHLER, VOGT und WEYGANDT. Geschichte der Erforschung und Fürsorge des jugendlichen Schwachsinn, Psychologie, Physiologie und Anatomie des normalen Kindes, Ursachen des Schwachsinn. Jena: G. Fischer, 1911. M. 5.
- PICQUÉ. Faux cénestopathe. Considérations sur l'origine périphérique de certains délires. (Soc. de Psychiat.) *L'Encéphale*, No. 5, 1911, p. 460.
- RÉGIS. La phase de réveil du délire onirique. *L'Encéphale*, No. 5, 1911, p. 409.
- DUPRÉ et LOGRE. Les délires d'imagination. Mythomanie délirante (suite). *L'Encéphale*, No. 5, 1911, p. 430.
- ROUGÉ. Manie simple et psychose périodique statistique. *Ann. Méd.-Psychol.*, mai-juin 1911, p. 353.
- SCUDERI. Psicosi familiari a tre. *Riv. ital. di Neuropatol.*, Aprile 1911, p. 172.
- GAUSSEN. La Mélancholie présénile. Étude psychologique et clinique. Paris: F. Alcan, 1911. 7 fr.
- TASTEVIN. L'asthénie post-douloureuse et les dysthénies périodiques (psychose périodique). (Suite.) *Ann. Méd.-Psychol.*, mai-juin 1911, p. 384.
- HIGIER. Tay-Sachs'sche familiäre amaurotische Idiotie und epileptische Krämpfe. *Neurol. Centralbl.*, No. 7, 1911, S. 369.
- DAMAYE. Les affections mentales curables et leur traitement. *Journ. de Neurol.*, avril 20, 1911, p. 141.
- BALLET. Délire de revendication. *Journ. des Prat.*, No. 18, 1911, p. 275.
- BALLET. Le domaine de la psychiatrie. *Presse méd.*, No. 37, 1911, p. 377.
- FRINK. Report of a Case of Psychogenetic Convulsions, simulating Epilepsy. *N.Y. Med. Journ.*, April 22, 1911, p. 776.
- SIKORSKY. Sur la confusion mentale. *Arch. de Neurol.*, mai 1911, p. 273.
- SCHNITZER. Die Mitwirkung des Psychiaters bei der Fürsorgeerziehung. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 5, H. 1, 1911, S. 1.
- FRANKHAUSER. Geschwisterpsychosen. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 5, H. 1, 1911, S. 52.
- GEUIL-PERRIN. L'idée de dégénérescence dans l'œuvre de Morel. *Rev. de Psychiat.*, avril 1911, p. 134.
- DAMAYE. Mélancholie confusionnelle toxi-tuberculeuse avec anxiété et idées de négation. *Rev. de Psychiat.*, avril 1911, p. 156.
- BECHTEREW und WLADYCZKO. Beiträge zur Methodik der objektiven Untersuchung von Geisteskranken. *Ztschr. f. Psychother.*, Bd. 3, H. 2, 1911, S. 87.
- MAJOR. Die psychopathische Konstitution. *St. Peters. med. Wchnschr.*, No. 17, 1911, S. 181.
- SIMONELLI. Il potere antitriptico del siero di sangue in alcune malattie mentali. *Riv. di Patol. nerv. e ment.*, Marzo 1911, p. 143.
- PASCAL. La démence précoce (étude clinique et médico-légale). *Rev. de Méd.*, No. 4, 1911, p. 304.

- CAPGRAS. Écrits et poésies d'une démente précoce. (Soc. de Psychiat.) *L'Encéphale*, No. 5, 1911, p. 474.
- SERGE SOUKANHOFF. La démence précoce et la syphilis. *Ann. Méd.-Psychol.*, mai-juin 1911, p. 377.
- DONATH. Bemerkung zu dem Aufsatz des Herrn O. Fischer. Ueber die Aussichten einer therapeutischen Beeinflussung der progressiven Paralyse. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 5, H. 1, 1911, S. 143.
- HANNARD et GAYET. De la paralysie générale et de la tabo-paralysie conjugales dans le département du Nord (1871-1909) (suite). *Ann. Méd.-Psychol.*, mai-juin 1911, p. 403.
- JOURDAN. Sur certaines formes de paralysie générale traumatique. *Journ. de Neurol.*, avril 8, 1911, p. 130.

TREATMENT *

- NEUHAUS. Erfahrungen mit Salvarsan, speziell bei Lues des Zentralnervensystems. *Münch. med. Wchnschr.*, No. 18, 1911, S. 955.
- SCRIPTURE. Treatment of Stuttering. *Journ. Amer. Med. Assoc.*, April 22, 1911, p. 1168.
- GEORGE M. ROBERTSON. The Continuous Administration of Sulphonal; its Dangers and the Precautions to be Adopted. *Journ. Ment. Sc.*, April 1911, p. 273.
- BABINSKI, CHARPENTIER, et DELHERM. Radiothérapie de la Sciatique. (Soc. de neurol.) *Rev. Neurol.*, No. 8, 1911, p. 525.
- SOUQUES et DE MARTEL. Mort rapide à la suite de craniectomie décompressive. *Rev. Neurol.*, No. 7, 1911, p. 413.

* A number of references to papers on Treatment are included in the Bibliography under the Individual Diseases.

Bibliography

ANATOMY

- JAKOB. Das Menschenhirn. München: J. F. Lehmann's Verl., 1911. M. 60.
- ALBERT KUNTZ. The Evolution of the Sympathetic Nervous System in Vertebrates. *Journ. Comp. Neurol.*, June 15, 1911, p. 215.
- GIANNULI. Sull'anatomia delle Radiazioni Rolandiche. *Riv. Speriment. di Freniat.*, 1911, Vol. xxxvii., p. 481.
- JESSIE L. KING. Localisation of the Motor Area in the Sheep's Brain by the Histological Method. *Journ. Comp. Neurol.*, June 15, 1911, p. 311.
- LOEWENTHAL. Étude historique et critique sur quelques nouvelles systématisations dans le cordon antéro-latéral de la moelle épinière. (Suite et fin.) *Rev. Méd. de la Suisse Romande*, No. 5, 1911, p. 281.
- NAGEOTTE. Le réseau syncytial et la gaine de Schwann dans les fibres de Remak. *Compt. Rend. de la Soc. de Biol.*, No. 20, June 9, 1911, p. 917.
- RÖTHIG. Beiträge zum Studium des Zentralnervensystems der Wirbeltiere. *Archiv f. Mikr. Anat.*, Vol. 77, 1911, p. 48.

PHYSIOLOGY

- A. D. WALLER. Sir Charles Bell and the Functions of the Fifth Nerve. *Lancet*, June 24, 1911, p. 1718.
- GRÜNSTEIN. Zur Frage von den Leitungsbahnen des Corpus striatum. *Neurol. Centralbl.*, Nr. 12, 1911, S. 659.
- LEGENDRE et PIÉRON. Contribution expérimentale à la physiologie du sommeil. *Rev. de Psychiat.*, No. 5, 1911, p. 190.
- SCHÄFER. Die Funktionen des Gehirnanhangs. (Hypophysis cerebri.) *Bern. Universitätsschr.*, H. 3, 1911.
- ALBERT S. and HELEN G. GRÜNBAUM. Some Points concerning the Structure and Function of the Pituitary Gland in Man. (Proc. Physiol. Soc.) *Journ. Physiol.*, May 22, 1911, p. xxviii.
- GANTRELET. Les systèmes nerveux sympathique et autonome dans la vie végétative. Étude de physiologie clinique. *Gaz. des Hôp.*, No. 63, 1911, p. 969.
- PELLIZZI. Ricerche istologiche e sperimentali sui plessi coroidi. *Riv. Speriment. di Freniat.*, 1911, Vol. xxxvii., p. 1.
- DONAGGIO. Nuovi dati sulle propaggini nervose del citoplasma e sulle fibre collagene dei gangli spinali. *Riv. Speriment. di Freniat.*, 1911, Vol. xxxvii., p. 136.
- SCHÖNBERG. Beziehungen zwischen der Quantität des Reizes und der Qualität der Empfindung. *Ztschr. f. Sinnesphysiol.*, Abt. II., Bd. 45, H. 3-4, 1911, S. 153.
- LINDHARD. On the Excitability of the Respiratory Centre. *Journ. Physiol.*, May 22, 1911, p. 337.
- MATHISON. The Effects of Asphyxia upon Medullary Centres. Part I.: The Vaso-Motor Centre. *Journ. Physiol.*, May 22, 1911, p. 283.
- NOËL PATON. The Thymus and Sexual Organs. III.: Their Relationship to the Growth of the Animal. *Journ. Physiol.*, May 22, 1911, p. 267.
- EDRIDGE-GREEN. The Discrimination of Colour. (Proc. Physiol. Soc.) *Journ. Physiol.*, May 22, 1911, p. xxiii.
- BURRIDGE. Observations on the Rôle of Potassium Salts in Frog's Muscle. *Journ. Physiol.*, May 22, 1911, p. 359.
- LANGLEY. The Action of Salts on the Neural and Non-neural Region of Muscle. (Proc. Physiol. Soc.) *Journ. Physiol.*, May 22, 1911, p. 24.
- LANGLEY. A Preparation for demonstrating the Polar Stimulation of Muscle (Persistent Contraction) by the Galvanic Current. (Proc. Physiol. Soc.) *Journ. Physiol.*, May 22, 1911, p. 27.
- DALE and MINES. The Action of Acids on Skeletal Muscle. (Proc. Physiol. Soc.) *Journ. Physiol.*, May 22, 1911, p. 29.

PSYCHOLOGY

- PETERSON. The Beginning of Mind in the New Born. *Bull. Lying-in Hosp. of City of New York*, Dec. 1911, p. 99.
- WILLIAM A. WHITE. Mental Mechanisms. *Nervous and Mental Disease Monograph Series*, No. 8, New York, 1911.
- KATXAROFF. Contribution à l'étude de la Récognition. *Arch. de Psychol.*, avril 1911, p. 1.
- TURRO. Die physiologische Psychologie des Hungers. *Ztschr. f. Sinnesphysiol.*, Abt. II., Bd. 45, H. 3-4, 1911, S. 217.
- CLAPARÈDE. Récognition et Moûté. *Arch. de Psychol.*, avril 1911, p. 79.
- ROHDE. Ein Beitrag zur Psychologie der Fahnenflucht. *Allg. Ztschr. f. Psychiat.*, Bd. 68, H. 3, 1911, S. 337.
- BENUSSI. Ueber die Motive der Scheinkörperlichkeit bei umkehrbaren Zeichnungen. *Arch. f. d. ges. Psychol.*, Bd. xx., H. 4, 1911, S. 363.
- MEYER. Experimentelle Analyse psychischer Vorgänge beim Schiessen mit der Handfeuerwaffe. *Arch. f. d. ges. Psychol.*, Bd. xx., H. 4, 1911, S. 397.
- ANSCHÜTZ. Ueber die Methoden des Psychologie. *Arch. f. d. ges. Psychol.*, Bd. xx., H. 4, 1911, S. 414.
- HARTSHORNE. Right-handedness and Left-handedness. *Albany Med. Ann.*, June 1911, p. 338.
- JOSÉ INGENIEROS. Psicología Genética (Historia natural de las funciones psíquicas). *Arch. de Psiquiat. y Criminol.*, Enero-Abril de 1911.
- BOHN. La Nouvelle Psychologie animale. Paris: F. Alcan, 1911. 2 fr. 50.
- TRIPIER. Instinct et Intelligence. Paris: Schleicher, 1911. 3 fr. 50.

PATHOLOGY

- NICHOLS. The Occurrence in Man of Double Ganglia upon the Dorsal Roots of the Spinal Nerves. *Anat. Rec.*, No. 5, 1911, p. 229.
- D. H. PAUL. Disseminated Softenings in the Spinal Cord in a Case of Pancreatic Cancer. *Rev. Neurol. and Psychiat.*, June 1911, p. 297.
- MARINESCO and MINEA. Nature des plaques séniles (Troisième note). *Compt. Rend. d. l. Soc. de Biol.*, May 27, 1911, p. 582.
- WEBER. De quelques altérations du tissu cérébral dues à la présence de tumeurs. *Nouv. Icon. de la Salpêtrière*, mars-avril 1911, p. 150.
- GHILARDUCCI. Valore clinico della reazione degenerativa a distanza. *Riv. Speriment. di Freniat.*, 1911, Vol. xxxvii., p. 441.
- SARTESCHI. Sopra una speciale alterazione della sostanza bianca in un caso di alcoolismo cronico. *Riv. Speriment. di Freniat.*, 1911, Vol. xxxvii., p. 115.
- GUIZZETTI e CAMISA. Quinto contributo all'anatomia patologica della corteccia infettiva, con due nuovi casi mortali. *Riv. Speriment. di Freniat.*, 1911, Vol. xxxvii., p. 266.

CLINICAL NEUROLOGY

GENERAL.—

- PIERRE MARIE. La Pratique Neurologique. Paris: Masson et Cie, 1911. 30 fr.
- HENRY H. DONALDSON. President's Address to the Philadelphia Neurological Society. *Journ. Nerv. and Ment. Dis.*, May 1911, p. 257.
- FUCHS. Einführung in das Studium der Nervenkrankheiten für Studierende und Ärzte. Wien: Deuticke, 1911. M. 9.
- JAKOB. La arteriosclerosis de los centros nerviosos. *Arch. Brasil. de Psychiat. e Neurol.*, Anno vi., Nos. 3 e 4, 1910, p. 213.
- VANDER VEER. Some Clinical Experiences with Cases subjected to the Wassermann-Noguchi Test. *Albany Med. Ann.*, June 1911, p. 318.
- W. B. WARRINGTON. Injury as an Etiological Factor in the Causation of some well-defined Nervous Diseases. *Med. Chron.*, June 1911, p. 121.
- BERGMANN. Selbstbefreiung aus nervösen Leiden. Freiburg i. B.: Herder, 1911. M. 3.30.

MUSCLES.—

- ACKER. Myasthenia Gravis. *Journ. Amer. Med. Assoc.*, No. 21, 1911, p. 1555.
- TAYLOR. Myasthenia Gravis. *Ophthal. Rec.*, June 1911, p. 173.

NERVES.—

- CLAUDE et CHAUVET. Sémiologie réelle des Sections totales des nerfs mixtes périphériques. Paris: Maloine, 1911.

- SÉZARY et HEUYER. Paralyse du Plexus brachial et syndrome de Cl. Bernard-Horner chez un Lymphadénique. (Soc. de neurol.) *Rev. Neurol.*, No. 10, 1911, p. 644.
- RINDFLEISCH. Ischiadikuslähmung mit Entartungsreaktion nach intramuskulärer, schwerer Kollaps nach subkutaner Injektion von Salvarsan. *Münch. med. Wchnschr.*, No. 25, 1911, S. 1357.
- PITFIELD. Relaxation of the Sacro-iliac Joints as a Cause of Sciatica and Backache. *Amer. Journ. Med. Sc.*, June 1911, p. 855.
- BOVERI. Ueber die familiäre hypertrophische Neuritis: Typus Gombault-Dejerine-Sottas, und Typus Pierre Marie. *Münch. med. Wchnschr.*, No. 23, 1911, S. 1238.
- WHOLEY. An Obscured Alcoholic Multiple Neuritis in a Case apparently of Frank Opium Addiction. *Journ. Amer. Med. Assoc.*, No. 21, 1911, p. 1554.
- ROSENBAUM. Zwei Fälle von Herpes zoster in Verbindung mit Nierenkrankheit. *Deutsche med. Wchnschr.*, Nr. 24, 1911, S. 1120.

SPINAL CORD—

- KARL PETRÉN. Les voies de conduction de la sensibilité dans la moelle épinière. *Rev. Neurol.*, No. 9, 1911, p. 548.
- SALOMON. Zur Frage der spinalen Lokalisation der Mm. glutaci. *Archiv f. Psychiat.*, Bd. 48, H. 2, 1911, S. 776.
- Tabes Dorsalis.**—COURTOIS-SUFFIT et BOURGEOIS. De l'état antérieur devant la jurisprudence, à propos de deux cas de traumatismes chez des tabétiques frustes. *Gaz. des Hôp.*, No. 62, 1911, p. 953.
- Poliomyelitis Anterior Acuta.**—LOVETT and SHEPPARD. The Occurrence of Infantile Paralysis in Massachusetts in 1910. *Boston Med. and Surg. Journ.*, No. 21, 1911, p. 737.
- ZAPPERT, WIESNER, und LEINER. Studien über die Heine-Medinische Krankheit. Wien: Deuticke, 1911. M. 6.
- SCHREIBER. La Poliomyélite épidémique. (Maladie de Heine-Medin.) Paris: Steinheil, 1911. 10 frs.
- PÜRCKHAUER. Zur Frage der poliomyelitischen Lähmungen. *Münch. med. Wchnschr.*, No. 22, 1911, S. 1179.
- MARINESCO. Transmission du virus de la poliomyélite par le sympathique (Troisième note). *Compt. Rend. de la Soc. de Biol.*, May 27, 1911, p. 879.
- FLEXNER and CLARK. Contamination of the Fly with Poliomyelitis Virus. *Journ. Amer. Med. Assoc.*, No. 23, 1911, p. 1717.
- ROSENAU, SHEPPARD, and AMOSS. Anterior Poliomyelitis. Attempts to Transmit the Disease to Monkeys by Inoculation with the Nasal, Pharyngeal, and Buccal Secretions. *Boston Med. and Surg. Journ.*, No. 21, 1911, p. 743.
- ED. MÜLLER. Die Serodiagnose der epidemischen Kinderlähmung. *Deutsche med. Wchnschr.*, Nr. 24, 1911, S. 1105.
- KOPLIK. The Cerebral Forms of Poliomyelitis and their Diagnosis from Forms of Meningitis. *Amer. Journ. Med. Sc.*, June 1911, p. 788.
- BEVERLY TUCKER. The Prevention of Poliomyelitis, with Especial Reference to the Prevention of Deformity. *Pediatrics*, May 1911, p. 270.
- ZAHORSKY. Whey and Condensed Milk in the Treatment of Infantile Atrophy. *Pediatrics*, May 1911, p. 282.
- HAZEN. Poliomyelitis. Report of Cases. Electrical Treatment. *Pediatrics*, May 1911, p. 286.
- GARLICK. Surgical Sequels of Acute Anterior Poliomyelitis. *Albany Med. Ann.*, June 1911, p. 326.
- HERNAMAN-JOHNSON. A Case of Infantile Paralysis in a Girl aged Five Years. Treatment by Electricity and a Specially Devised Boot, with Concealed Supports. *Lancet*, June 24, 1911, p. 1700.
- W. F. WAUGH. Herpes Zoster, Acute Poliomyelitis, and Zinc Phosphide. *Med. Rec.*, May 27, 1911, p. 958.
- CLAUDE et SCHAEFFER. Le Zone paralytique des nerfs craniens et la théorie de la poliomyélite postérieure aiguë. *Presse Méd.*, No. 42, 1911, p. 347.
- Disseminated Sclerosis.**—SIEMERLING u. RAECKE. Zur pathologischen Anatomie und Pathogenese der multiplen Sklerose. *Archiv f. Psychiat.*, Bd. 48, H. 2, 1911, S. 824.
- RAD. Über Pupillenstarre bei multipler Sklerose. *Neurol. Centralbl.*, Nr. 11, 1911, S. 584.
- Syringomyelia.**—DREYFUS. Ueber neuro-myotonische Reaktion bei einem Falle von Syringomyelie. *Ztschr. f. d. ges. u. Neurol. u. Psychiat.*, Bd. 5, H. 3, 1911, S. 414.
- CLAUDE. Les accidents ostéo-articulaires au cours de la syringomyélie. *Journ. des Prat.*, No. 23, 1911, p. 358.

Spine.—ELDAROFF. La spondylose rhizomélisque est une entité morbide spéciale. *Nouv. Icon. de la Salpêtrière*, mars-avril 1911, p. 121.

Cerebro-Spinal Fluid.—LATEINER. Das Verhalten des Reduktionsindex in der normalen und pathologischen Zerebrospinalflüssigkeit. *Wien. klin. Wochschr.*, Nr. 22, 1911, S. 783.

BOVERI. Tension du liquide céphalo-rachidien. *Compt. Rend. d. l. Soc. de Biol.*, No. 18, May 26, 1911, p. 809.

CHAUFFARD, LAROCHE et GRIGAUT. Le taux de la cholestérine dans le liquide céphalo-rachidien normal et pathologique. *Compt. Rend. d. l. Soc. de Biol.*, May 27, 1911, p. 855.

BOVERI. La réaction de Butenko dans le liquide céphalo-rachidien. *Compt. Rend. d. l. Soc. de Biol.*, May 27, 1911, p. 834.

BOVERI. Le liquide céphalo-rachidien dans la pellagre. *Compt. Rend. d. l. Soc. de Biol.*, No. 20, June 9, 1911, p. 904.

VIEGAS. Contribuicao ao estudo do liquido cephalo-rachidiano na demencia precoce. *Arch. Brasil. de Psychiat. e Neurol.*, Anno vi., Nos. 3 e 4, 1910, p. 227.

BRAIN—

OLAVO ROCHA. Perturbacoes circulatorias do cerebro. *Arch. Brasil. de Med.*, abril 1911, p. 336.

Meningitis.—NETTER et DEBRÉ. La Méningite Cérébro-spinale. Paris: Masson et Cie, 1911. 8 fr.

CHARDON. Méningites cérébro-spinales, avec envahissement massif du liquide céphalo-rachidien par des micro-organismes et absence de réactions cellulaires. (Thèse.) Paris: Vigot frères, 1911.

J. L. MORSE. Meningitis in Infancy. *Boston Med. and Surg. Journ.*, No. 20, 1911, p. 701.

DEBRÉ. Diagnostic et traitement de la méningite cérébro-spinale. *Presse Méd.*, No. 43, 1911, p. 445.

DEBRÉ. Inoculations expérimentales du Diplocoque de Weichselbaum contenu dans le liquide céphalo-rachidien de méningitiques. *Rev. de Méd.*, No. 5, 1911, p. 402.

ERNST LEVY. Serumbehandlung der übertragbaren Genickstarre. *Klin. Jahrb.*, Bd. 25, H. 2, 1911, S. 121.

REMLINGER. Méningite cérébro-spinale purulente aseptique. *Compt. Rend. d. l. Soc. de Biol.*, No. 20, June 9, 1911, p. 893.

CHANDLER WALKER. Tuberculous Meningitis, with Leucocytosis and a Purulent Exudation containing many Bacilli. *Boston Med. and Surg. Journ.*, No. 23, 1911, p. 816.

BELKOWSKI. Actinomycose de la Base du Crâne et des Méninges. Diabète insipide. *Rev. de Méd.*, No. 5, 1911, p. 415.

Hydrocephalus.—FISCHER. Hydrocephalus nach Dura und Gehirnblutungen bei Säuglingen. *Ztschr. f. Kinderheilk.*, June 3, 1911, S. 248.

Encephalitis.—MARTHA ULRICH. Ein Fall von Encephalitis acuta haemorrhagica. *Med. Klinik*, Nr. 21, 1911, S. 817.

Hemiplegia.—EGGER. La motilité du Pied de l'Hémiplégique. (Soc. de neurol.) *Rev. Neurol.*, No. 10, 1911, p. 641.

SABLÉ. Inversion du Réflexe Tricipital au cours d'une Hémiplégie organique. (Soc. de neurol.) *Rev. Neurol.*, No. 10, 1911, p. 640.

Tumours.—FOSTER KENNEDY. The Diagnosis of Tumour or Abscess Formation in the Temporo-sphenoidal Lobe. *Journ. Amer. Med. Assoc.*, No. 22, 1911, p. 1639.

ALQUIER et KLARFELD. Sur le diagnostic des tumeurs de la protubérance annulaire (Suite). *Gaz. des Hôp.*, No. 67, 1911, p. 1033.

KÜMMELL. Zur Kenntnis der Geschwülste der Hypophysengegend. *Munch. med. Wochschr.*, Nr. 24, 1911, S. 1293.

ANTON. Zur Diagnose und Behandlung der Geschwülste im vierten Gehirnvtrikel. *Archiv f. Psychiat.*, Bd. 48, H. 2, 1911, S. 523.

CLAUDE et SCHAEFFER. Adiposité et lésions hypophysaires dans un cas de tumeur du corps calleux sans apraxie. *Journ. de Physiol.*, No. 3, 1911, p. 406.

REISSMANN. Tumours at the Base of the Brain, producing Symptoms of Acromegaly. *Austral. Med. Gaz.*, April 20, 1911, p. 192.

FIORE. Las intomatologia del tumore cerebellare nei bambini. *Riv. Speriment. di Freniat.*, 1911, Vol. xxxvii., p. 407.

COLLIN et BARBÉ. Gliome de l'angle ponto-cérébelleux. *Rev. Neurol.*, No. 10, 1911, p. 601.

MATTIOLI. Un sarcoma del cervello. Contributo allo studio dei tumori cerebrali. *Riv. di Patol. nerv. e ment.*, Maggio 1911, p. 285.

Syphilis.—MÉRA. Syphilis cérébrale maligne et précoce, à localisations artérielles. *Journ. des Prat.*, No. 23, 1911, p. 360.

Aphasia.—FRORIEP. Ist F. J. Gall an der Entdeckung des Brocaschen Sprachzentrums beteiligt? *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 5, H. 3, 1911, S. 293.

NISSL VON MAYENDORF. Die aphasischen Symptome und ihre kortikale Lokalisation. Leipzig: Engelmann, 1911.

D'HOLLANDER. Aphasie sensorielle compliquée de surdité et de cécité d'origine centrale. Autopsie. *Journ. de Neurol.*, mai 5, 1911, p. 161.

C. MACFIE CAMPBELL. Agraphia in a Case of Frontal Tumour. *Rev. Neurol. and Psychiat.*, June 1911, p. 287.

V. STAUFFENBERG. Beitrag zur Lokalisation der Apraxie. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 5, H. 3, 1911, S. 434.

DEARBORN. The Neurology of Apraxia. *Boston Med. and Surg. Journ.*, No. 22, 1911, p. 783.

Cerebellum.—RUTTIN. Klinische Studien zur Differentialdiagnose der Labyrinthitis, der Meningitis und des Kleinhirnsabscesses. *Monatsschr. f. Ohrenheilk.*, H. 5, 1911, S. 593.

BÁRÁNY. Beziehungen zwischen Vestibularapparat und Cerebellum. *Monatsschr. f. Ohrenheilk.*, H. 5, 1911, S. 505.

GENERAL AND FUNCTIONAL DISEASES—

BONHOEFFER. Wie weit kommen psychogene Krankheitszustände und Krankheitsprozesse vor, die nicht der Hysterie zuzurechnen sind? *Allg. Ztschr. f. Psychiat.*, Bd. 68, H. 3, 1911, S. 371.

F. S. PALMER. Traumatic Neuroses and Psychoses. *Practitioner*, June 1911, p. 808.

TRIGANT BURROW. Freud's Psychology in its Relation to the Neuroses. *Amer. Journ. Med. Sc.*, June 1911, p. 873.

SEMI MEYER. Springender und schnellender Patellarreflex bei Neurosen. *Neurol. Centralbl.*, Nr. 12, 1911, S. 655.

Epilepsy.—BENN. Die Aetiologie der Pubertätsepilepsie. *Allg. Ztschr. f. Psychiat.*, Bd. 68, H. 3, 1911, S. 330.

CRISTIANI. Contributo psichiatrico-forense allo studio dell' epilessia ed alcoolismo. *Riv. Ital. di Neuropatol.*, Guigno 1911, p. 264.

DUCASTÉ. Erections comme équivalent épileptique. *Rev. de Psychiat.*, No. 5, 1911, p. 183.

JÖDICKE. Die Bewertung kochsalzärmer und kochsalzreicher Nahrung für die Therapie der Epilepsie. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 5, H. 3, 1911, S. 319.

DALZELL. The Relation of Epilepsy to Crime, and the Control of Epileptics by the State. *Journ. Roy. Inst. of Public Health*, June 1911, p. 331.

Chorea.—COOMBS. The Nature and Treatment of Chorea. *Med. Press*, June 7, 1911, p. 597.

CROUZON et LAROCHE. Un cas de Chorée chronique non progressive ayant débuté dans l'Enfance. (Soc. de neurol.) *Rev. Neurol.*, No. 10, 1911, p. 654.

Hysteria.—TOM A. WILLIAMS. Cases illustrating the Origin of Hysterical and Pseudo-Hysterical Symptoms. *Med. Press*, May 24, 1911, p. 540.

LÜCKERATH. Zur Differentialdiagnose zwischen Dementia praecox und Hysterie. *Allg. Ztschr. f. Psychiat.*, Bd. 68, H. 3, 1911, S. 312.

Neurasthenia.—ESPOSITO. L'elemento causale ginecologico nei rapporti delle neuropsicopatie. *Riv. Ital. di Neuropatol.*, Guigno 1911, p. 241.

F. H. BARNES. Treatment of Neurasthenia. *Med. Rec.*, May 27, 1911, p. 959.

Neuralgia.—SCHELLONG. Die Neuralgien der täglichen Praxis. Berlin: Springer, 1911. M. 1.80.

Writers' Cramp.—HARTENBERG. Crampe des écrivains par hypotonie musculaire. *Rev. Neurol.*, No. 10, 1911, p. 604.

Tetany.—SCHIFFER. Ueber familiäre chronische Tetanie. *Jahrb. f. Kinderheilk.*, Mai 5, 1911, S. 601.

M'CARRISON. Endemic Tetany in the Gilgit Valley. *Lancet*, June 10, 1911, p. 1575.

Paralysis Agitans.—COUES. Notes on a Case of Paralysis Agitans and Cerebral Sclerosis. *Boston Med. and Surg. Journ.*, No. 21, 1911, p. 754.

Exophthalmic Goitre.—RAYNAUD. La Pathogénie du goitre exophthalmique. Son traitement. (Thèse.) Montpellier: Firmin, Montane et Sicardi, 1911.

Dercum's Disease.—MARCHAND et NOUET. Étude anatomo-pathologique d'un cas de maladie de Dercum chez une imbécile épileptique. *Nouv. Icon. de la Salpêtrière*, mars-avril 1911, p. 144.

FENARD. Adipose douloureuse segmentaire rhizomélique. *Prog. méd.*, No. 21, 1911, p. 254.

Alcoholism, etc.—JESKE. Die Abnahme der Frequenz des Delirium tremens in Breslau im Gefolge der Branntweinbesteuerung von 1909. *Allg. Ztschr. f. Psychiat.*, Bd. 68, H. 3, 1911, S. 353.

CHARTIER. La désintoxication rapide de la morphine et de la diacétylmorphine. *Semaine méd.*, No. 23, 1911, p. 265.

SPECIAL SENSES AND CRANIAL NERVES—

BARTELS. Zu den "Bemerkungen zur Prüfung der Lichtreaktion" von den Herren Oppenheim und Schuster. *Neurol. Centralbl.*, Nr. 11, 1911, S. 589.

G. H. BELL. Ocular Manifestations of the Peripheral Affections of the Fifth Cranial Nerve. *Med. Rec.*, May 13, 1911, p. 863.

KOWNATZKI. Doppelseitige Taubheit infolge von Syphilis, 6 Monate nach der Infektion. *Munch. med. Wochenschr.*, No. 25, 1911, S. 1359.

ALEXANDER. Die Reflexerregbarkeit des Ohrlabyrinthes am menschlichen Neugeborenen. *Ztschr. f. Sinnesphysiol.*, Abt. II., Bd. 45, H. 3-4, 1911, S. 153.

BECK. Syphilis als Ursache isolierter retrolabyrinthärer Vestibularerkrankung. *Monatsschr. f. Ohrenheilk.*, H. 5, 1911, S. 514.

MISCELLANEOUS SYMPTOMS AND CASES—

LANGELAAN. Die nervösen Stigmata der Asthenia universalis (Stiller). *Neurol. Centralbl.*, Nr. 11, 1911, S. 575.

NÄCKE. Biologisches und Forensisches zur Handschrift. *Neurol. Centralbl.*, Nr. 12, 1911, S. 642.

LAMBRANZI. In causa d'annullamento di matrimonio per impotenza virile funzionale. *Riv. Speriment. di Freniat.*, 1911, Vol. xxxvii, p. 384.

COSTANTINI. Un senile "normale" di 105 anni. *Riv. Speriment. di Freniat.*, 1911, Vol. xxxvii, p. 519.

BENIGNI. Le funzioni intestinali negli ammalati di mente studiate coi metodi di Schmidt e Strasburger. *Riv. Speriment. di Freniat.*, 1911, Vol. xxxvii, p. 226.

MORPURGO. Ricerche sulla Associazione delle idee nei Pazzi Pellagrosi. *Riv. Speriment. di Freniat.*, 1911, Vol. xxxvii, p. 195.

ROMAGNA-MANOIA. Contributo anatomo-clinico allo studio delle vie del lemisco. *Riv. Speriment. di Freniat.*, 1911, Vol. xxxvii, p. 429.

HINDS HOWELL. Hand Atrophies. *Med. Press*, May 24, 1911, p. 545.

RANSCHBURG. Das kranke Gedächtnis. Leipzig: J. A. Barth, 1911. M. 4.50.

STEVENS. A Series of Studies of Nervous Affections in Relation to the Adjustments of the Eyes. *N. Y. Med. Journ.*, May 20, 1911, p. 967.

TOWNSEND and VALENTINE. Functional Sexual Disorders proceeding from the Genito-urinary Tract. *Med. Rec.*, May 27, 1911, p. 950.

COUES. Meningismus from Active Cervical Adenitis and Peritonsillar Infiltration. *Journ. Amer. Med. Assoc.*, No. 20, 1911, p. 1443.

DUCROQUET. Le pied creux paralytique (paralysie du triceps sural). *Press. méd.*, Nr. 48, 1911, p. 503.

COLLIN. Procédés de recherche de la résistance à la fatigue chez l'enfant. *Gaz. des Hôp.*, No. 69, 1911, p. 1061.

LÉOPOLD-LÉVI et H. DE ROTHSCILD. Migraine thyroïdienne de l'enfant. *Rec. d'Hygiène*, No. 2, 1911, p. 113.

IBRAHIM. Ueber respiratorische Affektkrämpfe im frühen Kindesalter (das sogenannte "Wegbleiben" der Kinder). *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 5, H. 3, 1911, S. 388.

SIEBRAND. Untersuchungen über den Kältesinn. *Ztschr. f. Sinnesphysiol.*, Abt. II., Bd. 45, H. 3-4, 1911, S. 204.

CALLIGARIS. Disturbi della sensibilità di origine cerebrale a tipo segmentario. *Riv. Ital. di Neuropatol.*, Guigno 1911, p. 252.

MOSSE. Déformations Acromégaloïdes. (Soc. de neurol.) *Rev. Neurol.*, No. 10, 1911, p. 646.

CARYOPHYLLIS. Arthropathie avec fracture spontanée du col du fémur chez un cancéreux portant des tumeurs secondaires métastatiques multiples. *Nouv. Icon. de la Salpêtrière*, mars-avril 1911, p. 140.

W. B. WARRINGTON. A Case of Lymphadenoma terminating in Paraplegia. *Med. Press*, June 7, 1911, p. 601.

CURRAN POPE. A Certain and Simple Method of obtaining the Knee-Jerk. *Journ. Amer. Med. Assoc.*, No. 23, 1911, p. 1705.

DUPRÉ et KAHN. Ictus avec abolition des Réflexes cutanés et tendineux, exagération des Réactions de défense avec Spasmes musculaires, etc. (Soc. de neurol.) *Rev. Neurol.*, No. 10, 1911, p. 649.

LEONARD J. KIDD. Unilateral Crossed Extensor Plantar Reflex. *Rev. Neurol. and Psychiat.*, June 1911, p. 302.

PSYCHIATRY

- GRASSI. Resoconto statistico-clinico del Manicomio di Siena nel triennio 1908-1910. *Rassegna di Studi Psichiat.*, Vol. i., f. 2, 1911, p. 143.
- LIEPMANN. Über Wernicke's Einfluss auf die klinische Psychiatrie. Berlin: Karger, 1911. M. 1.
- JUNG. Diagnostische Assoziationsstudien. Beiträge zur experimentellen Psychopathologie. Leipzig: J. A. Barth, 1911. M. 12.
- ROXO. Causas de reinternacao de alienados no Hospicio Nacional. *Arch. Brasil. de Psychiat. e Neurol.*, Anno vi., Nos. 3 e 4, 1910, p. 403.
- FRANÇO DA ROCHA. Assistencia familiar aos insanos em S. Paulo. *Arch. Brasil. de Psychiat. e Neurol.*, Anno vi., Nos. 3 e 4, 1910, p. 397.
- MOREIRO. Quaes os melhores meios de assistencia aos alienados? *Arch. Brasil. de Psychiat. e Neurol.*, Anno vi., Nos. 3 e 4, 1910, p. 373.
- VIDAL. La institucion de ninos surdomudos en la República Argentina. *Arch. Brasil. de Psychiat. e Neurol.*, Anno vi., Nos. 3 e 4, 1910, p. 342.
- CANNON and ROSANOFF. Preliminary Report of a Study of Heredity in Insanity in the Light of the Mendelian Laws. *Journ. Nerv. and Ment. Dis.*, May 1911, p. 272.
- TAMBURINI. Psicosi catatonica acuta e psicosi maniaco-depressiva catatonica. *Riv. Speriment. di Freniat.*, 1911, Vol. xxxvii. p. 369.
- FUNAIOLI. Organizzazione del servizio medico-psichiatrico nell'esercito. *Riv. Speriment. di Freniat.*, 1911, Vol. xxxvii., p. 337.
- BARONCINI. Di alcuni "reperti d'autopsia" in malati di mente. *Riv. Speriment. di Freniat.*, 1911, Vol. xxxvii., p. 537.
- GRAZIANI. Ricerche sulle modificazioni citologiche del sangue nelle principali psicosi. *Riv. Speriment. di Freniat.*, 1911, Vol. xxxvii., p. 156.
- NÄCKE. Homosexualität und Psychose. *Allg. Ztschr. f. Psychiat.*, Bd. 68, H. 3, 1911, S. 295.
- ALLAN STARR. Acute Psychosis due to Belladonna Poisoning. *Med. Rec.*, June 10, 1911, p. 1050.
- DEJERINE. Le domaine de la psychiatrie. Réponse à M. le professeur Gilbert Ballet. *Presse méd.*, No. 41, 1911, p. 425.
- KÖNIG. Zur Kasuistik der nach. Blitzschlag auftretenden psychischen Störungen. *Berl. klin. Wchnschr.*, No. 25, 1911, S. 1121.
- HUGO MARX. Die geistig Minderwertigen in einem künftigen deutschen Strafgesetzbuche. *Berl. klin. Wchnschr.*, No. 22, 1911, S. 993.
- JOLLY. Beitrag zur Statistik u. Klinik der Puerperalpsychose. *Archiv f. Psychiat.*, Bd. 48, H. 2, 1911, S. 792.
- MEYER. Die Puerperalpsychosen. *Archiv f. Psychiat.*, Bd. 48, H. 2, 1911, S. 459.
- RUNGE. Die Generationspsychosen des Weibes. *Archiv f. Psychiat.*, Bd. 48, H. 2, 1911, S. 545.
- KLEIST. Die Streitfrage der akuten Paranoia. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 5, H. 3, 1911, S. 366.
- SÉRIEUX et LWOFF. Moyens de contrainte employés envers les aliénés au Maroc. *Rev. de Psychiat.*, No. 5, 1911, p. 185.
- SCHLIEPS. Wandertrieb psychopathischer Knaben und Mädchen. *Monatsschr. f. Kinderheilk.*, Nr. 2, 1911, S. 65.
- LONGWORTH. Blood Pressure in Mental Disorders. *Brit. Med. Journ.*, June 10, 1911, p. 1366.
- ROXO. Da vontade nos alienados. *Arch. Brasil. de Med.*, abril 1911, p. 288.
- ZIVERI. Contributo clinico allo studio dell'Amenza e stati affini. *Rassegna di Studi Psichiat.*, Vol. i., f. 2, 1911, p. 121.
- PREISIG. Notes sur le Langage chez les Aliénés. *Arch. de Psychol.*, avril 1911, p. 91.
- BENON. Les dysthénies périodiques. La psychose périodique ou maniaque-dépressive. *Rev. Neurol.*, No. 9, 1911, p. 541.
- ROSANOFF. The Prevention of Insanity: Hygiene of the Mind. *Med. Rec.*, May 13, 1911, p. 854.
- FRAENKEL. Beitrag zur Aetiologie des Korsakowschen Symptomenkomplexes. *Archiv f. Psych.*, Bd. 48, H. 2, 1911, S. 754.
- ROCHA VAS. Breves consideracoes sobre a syndrome de Korsakoff. *Arch. Brasil. de Med.*, abril 1911, p. 327.
- COSTANTINI. Nuovo contributo allo studio clinico della "dementia praecocissima." *Riv. Speriment. di Freniat.*, 1911, Vol. xxxvii., p. 305.
- PASCAL. La Démence précoce. Étude psychologique médicale et médico-legale. Paris: F. Alcan, 1911. 4 fr.
- DANVERS. The Use of Thyroid Extract in Dementia Praecox. *Austral. Med. Gaz.*, April 20, 1911, p. 200.

- TAMBURINI. Questioni medico-forensi relative alla Paralisi generale progressiva specialmente in relazione alla capacità di testare. *Riv. Speriment. di Freniat.*, 1911, Vol. xxxvii., p. 458.
- AMSDEN. Note on the "Liquor Bellostii" Test in Paresia. *N. Y. Med. Journ.*, June 3, 1911, p. 1090.
- PREISIG. Paralyse générale, syphilis cérébrale diffuse ou psychose artério-sclérotique? *Rev. Méd. de la Suisse Romande*, No. 5, 1911, p. 330.
- W. DE ALMEIDA. Subsidio clinico ao estudo da paralyia geral feminina no Rio de Janeiro. *Arch. Brasil. de Med.*, abril 1911, p. 347.
- SNESAREW. Ein Fall atypischer progressiver Paralyse der Irren, verbunden mit Entwicklung von Fibrillennetzen des Bindegewebes in der Hirnsubstanz. *Neurol. Centralbl.*, Nr. 11, 1911, S. 590.

TREATMENT *

- GRASSET et RIMBAUD. Thérapeutique des maladies du système nerveux. Paris: O. Doin et fils, 1911.
- J. J. MACPHEE. Practical Treatment of Nervous People. *N. Y. Med. Journ.*, June 3, 1911, p. 1065.
- PAUL-EMILE LÉVY. Contre l'isolement et pour la cure libre dans le traitement des névroses. *Journ. des Prat.*, No. 24, 1911, p. 373.
- KRONE. Die Bedeutung der Psychotherapie in der balneologischen Praxis. *Med. Klinik*, Nr. 24, 1911, S. 924.
- GYWNN MAITLAND. The Therapeutics of Suggestion. *Birmingham Med. Rev.*, June 15, 1911, p. 279.
- N. W. TRINK. Dreams and their Analysis in Reference to Psychotherapy. *Med. Rec.*, May 27, 1911, p. 943.
- FOREL. Der Hypnotismus oder die Suggestion und die Psychotherapie. Stuttgart: Enke, 1911. M. 6.60.
- TROHLICH. Die Pharmakologie des vegetativen Nervensystems. *Wien. med. Wchnschr.*, Nr. 25, 1911, S. 1606.
- BACCELLI. Statische Resultate der Behandlung des Tetanus mit subcutanen Carbolinjektionen. *Berl. klin. Wchnschr.*, No. 23, 1911, S. 1021.
- PUSSEP. Über die Behandlung von Neuralgien mittels Einspritzungen von Alkohol in den Nervenstamm. *Archiv f. Psychiat.*, Bd. 48, H. 2, 1911, S. 691.
- SCHEPELMANN. Zur Technik der Kochsalzinjektionen bei Ischias. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 5, H. 3, 1911, S. 430.
- WEISENBURG. The Diagnosis of Facial Pains from those of Tic-douloureux and their Treatment by Alcoholic Injection. *Ther. Gaz.*, May 1911, p. 305.
- CHARON et COURBON. Injections mercurielles et hémiplegie. *Nouv. Icon. de la Salpêtrière*, mars-avril 1911, p. 162.
- E. MAYER. Die Behandlung der frischen Kinderlähmung durch Ruhigstellung. *Deutsche med. Wchnschr.*, Nr. 24, 1911, S. 1107.
- BRESLER. Salvarsan, das Ehrlich-Hatasche Heilmittel bei syphilitischen Nervenkrankheiten. Halle: Marhold, 1911. M. 1.80.
- BENARIO. Ueber Neurorezidive, besonders unter der Salvarsanbehandlung. München: J. F. Lehmann's Verl., 1911. M. 2.
- TRENPEL. Die Salvarsan-Therapie bei Lues des Zentralnervensystems, bei Tabes und Paralyse. *Deutsche med. Wchnschr.*, Nr. 22, 1911, S. 1012.
- WESTPHAL. Ueber einen Todesfall nach Behandlung mit Salvarsan bei spinaler Erkrankung, mit mikroskopischer Untersuchung des Rückenmarks. *Berl. klin. Wchnschr.*, No. 22, 1911, S. 973.
- DESNEUX und DUJARDIN. Die Neurorezidive nach Behandlung der Syphilis mit Salvarsan. *Munch. med. Wchnschr.*, No. 23, 1911, S. 1245.
- SCHAMBERG. Cause of Inflammation of Cranial Nerves after the Use of Salvarsan. *Journ. Amer. Med. Assoc.*, No. 20, 1911, p. 1433.
- RUTTIN. Freilegung der vorderen Theile der mittleren Schädelgrube zur Erreichung ausgedehnter otogener Extraduralabscesse. *Archiv f. klin. Chir.*, Bd. 55, H. 11, 1911, S. 70.
- LLOYD and SPELLISSY. A Case of Cerebral Decompression of Five Years' Standing, in which a Large Cerebral Hernia has resulted, with Marked Improvement in Optic Neuritis. *Journ. Nerv. and Ment. Dis.*, May 1911, p. 267.
- RICHARD LAKE. Ten Cases of Operation for Ménière's Disease. *Lancet*, June 10, 1911, p. 1569.
- BIRCHER. Krönlein'sche Operation bei Retrobulbärtumor. *Archiv f. klin. Chir.*, Bd. 55, H. 11, 1911, S. 1.

* A number of references to papers on Treatment are included in the Bibliography under the individual Diseases.

Bibliography

ANATOMY

- J. L. KING. The Pyramidal Tract and other Descending Paths in the Spinal Cord of the Sheep. *Quart. Journ. Exp. Physiol.*, Vol. iv., No. 2, June 1911, p. 133.
- T. W. TODD. The Relations of the Thoracic Operculum considered in reference to the Anatomy of Cervical Ribs of Surgical Importance. *Journ. Anat. and Physiol.*, April 1911, p. 293.
- F. W. JONES. Variations of the First Rib associated with Changes in the Constitution of the Brachial Plexus. *Journ. Anat. and Physiol.*, April 1911, p. 249.
- FERRARI. Variations du plexus lombaire chez le nègre. *Bibliograph. Anat.*, Tome xxi., fasc. 4, 1911, p. 176.
- RICHARD. The Volume of the Ventricles of the Brain. *Anat. Rec.*, Vol. v., No. 6, June 20, 1911, p. 301.
- P. T. HERRING. The Development of the Elasmobranch Pituitary. *Quart. Journ. Exp. Physiol.*, Vol. iv., No. 2, June 1911, p. 183.
- MARINESCO. Etude ultramicroscopique des cellules des ganglions spinaux des animaux nouveau-nés. *Compt. Rend. de la Soc. de Biol.*, No. 23, June 21, 1911, p. 1057.
- MARINESCO. Des changements qu'impriment à la luminosité et à l'état colloïdal des cellules nerveuses vivantes certains agents physico-chimiques. *Compt. Rend. de la Soc. de Biol.*, No. 23, June 24, 1911, p. 1061.
- LEGENDRE and MINOT. Influence du barbotage sur la conservation des cellules nerveuses des ganglions spinaux hors de l'organisme. *Compt. Rend. de la Soc. de Biol.*, No. 23, June 24, 1911, p. 1034.
- BESTA. Ricerche sui reticolo endocellulare degli elementi nervosi e nuovi metodi di dimostrazione. *Riv. di Patol. nerv. e ment.*, Vol. xvi., fasc. 6, Giugno 1911, p. 341.
- CURTIS and HELMHOLZ. A Study of the Anterior Horn Cells of an Amelus, and their Relation to the Development of the Extremities. *Journ. Nerv. and Ment. Dis.*, Vol. xxxviii., No. 6, June 1911, p. 367.

PHYSIOLOGY

- F. W. MOTT, E. SCHUSTER, and C. S. SHERRINGTON. Motor Localisation in the Brain of the Gibbon, correlated with a Histological Examination. *Proc. Roy. Soc.*, July 3, 1911, p. 67.
- NAGEOTTE. Le Syncytium de Schwann et les Gains de la Fibre à Myéline dans les phases avancées de la Dégénération Wallérienne. *Compt. Rend. de la Soc. de Biol.*, T. lxx., Mai 27, 1911, p. 861.
- NAGEOTTE. Le Réseau Syncytial et la Gaine de Schwann dans les Fibres de Remak (Fibres Amyéliniques Composées). *Compt. Rend. de la Soc. de Biol.*, T. lxx., Juin 3, 1911, p. 917.
- NAGEOTTE. Syncytium de Schwann, en Forme de Cellules Névrogliques, dans les Plexus de la Cornée. *Compt. Rend. de la Soc. de Biol.*, T. lxx., Juin 10, 1911, p. 967.
- The Discovery of the Functions of the Spinal Roots (leading article). *Lancet*, July 15, 1911, p. 168.
- JANIE M'ILROY. The Independence of the Peripheral Sensory Neurone in view of the Results of Experimental Section of the Optic Nerve in the Rabbit. *Brain*, Part cxxxii., Vol. xxxiii., 1911, p. 464.
- CRIGHTON BRAMWELL and LUCAS. On the Relation of the Refractory Period to the Propagated Disturbance in Nerve. *Journ. Physiol.*, Vol. xlii., July 1911, p. 495.
- SHERRINGTON and SOWTON. Chloroform and Reversal of Reflex Effect. *Journ. Physiol.*, Vol. xlii., July 1911, p. 383.
- GRAHAM BROWN and C. S. SHERRINGTON. Notes on the Pilomotor System. *Quart. Journ. Exp. Physiol.*, Vol. iv., No. 2, June 1911, p. 193.
- GRAHAM BROWN. Studies in the Physiology of the Nervous System.. VII. Movements under Narcosis in the Pigeon. Movements under Narcosis in the Rabbit—Progression—Scratching—Flexion. *Quart. Journ. Exp. Physiol.*, Vol. iv., No. 2, June 1911, p. 151.

- R. KENNEDY. Experiments on the Restoration of Paralyzed Muscles by Means of Nerve Anastomosis. *Proc. Roy. Soc.*, July 3, 1911, p. 75.
- SCHÜLLER. Automatische Zentren und Reflexvorgänge im abgetöteten Darm. *Pflüger's Archiv*, Bd. 141, H. 1, 2, and 3, 1911, S. 133.
- SCHONBORN. Untersuchungen über den nervösen Mechanismus der Wärmeregulation. *Ztschr. f. Biol.*, Bd. 56, H. 3 and 4, Juni 1911, S. 209.
- E. A. SCHAFER and K. MACKENZIE. The Action of Animal Extracts upon Milk Secretion. *Proc. Roy. Soc.*, July 3, 1911, p. 16.
- CRAMER. On the Inactivation of Adrenalin *in vitro* and *in vivo*. (*Proc. Physiol. Soc.*) *Journ. Physiol.*, June 3, 1911, p. xxxvi.
- ERDHEIM. "Morphologische Studien über die Beziehungen der Epithelkörperchen zum Kalkstoffwechsel." I. "Über den Kalkgehalt des wachsenden Knochens und des Callus nach der Epithelkörperchenextirpation." III. "Zur Kenntnis der parathyreopriven Dentin-Veränderung." V. "Über die Dentinverkalkung im Nagelzahn bei der Epithelkörperchentransplantation." *Frankfurt Ztschr. f. Path.*, Bd. 7, H. 2, pp. 175, 238, and 295.
- FROHLICH. Die Pharmakologie des vegetativen Nervensystems. *Wien. Med. Wchnschr.*, Nr. 29, Juli 15, 1911, S. 1855.

PSYCHOLOGY

- ERNEST JONES. The Pathology of Morbid Anxiety. *Journ. Abnorm. Psychol.*, June-July 1911, p. 81.
- MORTON PRINCE. The Mechanism of Recurrent Psychopathic States with Special Reference to Anxiety States. *Journ. Abnorm. Psychol.*, June-July 1911, p. 135.
- DONLEY. Freud's Anxiety Neurosis. *Journ. Abnorm. Psychol.*, June-July 1911, p. 126.
- SIDIS. Fear, Anxiety, and Psychopathic Maladies. *Journ. Abnorm. Psychol.*, June-July 1911, p. 107.
- MACLEOD. Christian Science: A Psychological Study. *Caledon. Med. Journ.*, Vol. viii., No. 9, July 1911, p. 386.
- HILL. Comparative Study of Children's Ideals. *Pedagog. Seminary*, June 1911, p. 29.
- GODDARD. Two Thousand Normal Children measured by the Binet Measuring Scale of Intelligence. *Pedagog. Seminary*, June 1911, p. 260.
- TUCKER. Observations on the Colour Vision of School Children. *Brit. Journ. of Psychol.*, May 1911, p. 33.
- SADGER. Zur Psychologie des einzigen und des Lieblingskinds. *Fortschr. d. Med.*, Nr. 26, Juni 29, 1911, p. 601.
- WINCH. Some Relations between Substance Memory and Productive Imagination in School Children. *Brit. Journ. of Psychol.*, May 1911, p. 95.
- PEAR. The Experimental Examination of some Differences between the Major and the Minor Chord. *Brit. Journ. of Psychol.*, May 1911, p. 56.
- PEAR. The Classification of Observers as "Musical" and "Unmusical." *Brit. Journ. of Psychol.*, May 1911, p. 89.
- DUNLAP. The Fall-hammer, Chronoscope and Chronograph. *Brit. Journ. of Psychol.*, May 1911, p. 44.
- ACHER. Recent Freudian Literature. *Amer. Journ. of Psychol.*, No. 3, July 1911, p. 408.
- DUNLAP. Terminology in the Field of Sensation. *Amer. Journ. of Psychol.*, No. 3, July 1911, p. 444.
- JACOBSON. Consciousness under Anaesthetics. *Amer. Journ. of Psychol.*, No. 3, July 1911, p. 333.
- HAYES. The Color Sensations of the Partially Color-Blind: A Criticism of Current Teaching. *Amer. Journ. of Psychol.*, No. 3, July 1911, p. 369.
- SCHAUB. On the Intensity of Images. *Amer. Journ. of Psychol.*, No. 3, July 1911, p. 346.
- BARNHOLT and BENTLEY. Thermal Intensity and the Area of Stimulus. *Amer. Journ. of Psychol.*, No. 3, July 1911, p. 325.
- BRADLEY. On some Aspects of Truth. *Mind*, July 1911, p. 305.
- CATOR. Reality as a System of Function. *Mind*, July 1911, p. 342.
- BALSILLIE. Prof. Bergson on Time and Free Will. *Mind*, July 1911, p. 357.
- FIELD. The Meaning of Human Freedom. *Mind*, July 1911, p. 379.
- GAEDEKEN. Über die psycho-physiologische Bedeutung der atmosphärischen Verhältnisse, insbesondere des Lichts (Schluss folgt). *Ztschr. f. Psychoth. u. Med. Psychol.*, Bd. 3, H. 3, 1911, p. 129.
- JONES. Temperaments: Is there a Neurotic One? *Lancet*, July 1, 1911, p. 1.

PATHOLOGY

- ALEXANDER BRUCE and J. W. DAWSON. On the Relations of the Lymphatics of the Spinal Cord. *Rev. Neurol. and Psychiat.*, July 1911, p. 350.
- PATON and GORDON HOLMES. The Pathology of Papilloedema. *Brain*, Part cxxxii., Vol. xxxiii., 1911, p. 389.
- HANCOCK AND COATS. Pathological Examination of the Freshly Fixed Eyes from a Case of Amaurotic Family Idiocy. *Brain*, Part cxxxii., Vol. xxxiii., 1911, p. 514.
- BUZZARD. Toxic Degeneration of Lower Motor Neurone Cells commencing during Intra-uterine Life in an Infant Dying at 2½ Months. *Brain*, Part cxxxii., Vol. xxxiii., 1911, p. 508.
- AOYAGI. Studien über die Veränderungen des sympathischen Nervensystems, insbesondere der Neurofibrillen bei Morbus Basedowii. *D. Ztschr. f. Nervenheilk.*, Bd. 42, H. 1-2, 1911, S. 177.
- HORAND. Lésions du Sympathique Cervical dans le goitre exophtalmique. *Neurol. Centralbl.*, No. 11, Juin 15, 1911, p. 669.
- GUILLAIN and LAROCHE. La fixation des poisons sur le système nerveux. *Semaine Méd.*, No. 29, Juillet 19, 1911, p. 337.
- REICHMANN. Zur Physiologie und Pathologie des Liquor cerebrospinalis. *D. Ztschr. f. Nervenheilk.*, Bd. 42, H. 1-2, 1911, S. 1.
- TEBBUTT. The Pathology of some Cerebro-spinal Fluids. *Austral. Med. Gaz.*, Vol. xxx., No. 5, May 20, 1911, p. 258.
- SACHS-MÜKE. Beitrag zur Frage der Meningokokkentträger. *Hygien. Rundschau*, No. 12, Juin 15, 1911, p. 653.
- KAPLAN. Neurological Serology. *Journ. Nerv. and Ment. Dis.*, Vol. xxxviii., No. 6, June 1911, p. 331.
- A. C. GEEDDES. Report upon an Acromegalic Skeleton. *Journ. Anat. and Physiol.*, April 1911, p. 256.
- CLAUDE and BAUDOIN. Etude histologique des glandes à sécrétion interne dans un cas d'acromégalie. *Compt. Rend. de la Soc. de Biol.*, No. 25, Juillet 14, 1911, p. 75.
- HAGENBACH. Physiologie und Pathologie der Hypophyse. *Samml. Klin. Vortr.*, Nr. 637 (*Chirurgie*, Nr. 178), 1911, p. 481.
- GOETSCH, CUSHING and JACOBSON. Carbohydrate Tolerance and the Posterior Lobe of the Hypophysis Cerebri. *Bullet. of Johns Hopk. Hosp.*, Vol. xxii., No. 243, June 1911, p. 165.
- CLERET and GLEY. Nouvelle note sur les effets de la thyro-parathyroïdectomie après ovariectomie. *Compt. Rend. de la Soc. de Biol.*, No. 23, Juin 24, 1911, p. 1019.
- J. RITCHIE and A. NINIAN BRUCE. The Suprarenal Glands in Diphtheritic Toxæmia. *Quart. Journ. Exp. Physiol.*, Vol. iv., No. 2, June 1911, p. 127.
- BELL. Ciaccio's Method for the Demonstration of Lipoids. *Journ. Med. Research*, June 1911, p. 539.
- ACHARD and FLANDIN. Variations de la Toxicité des centres nerveux dans l'anaphylaxie. Action préservatrice de la lécithine. *Compt. Rend. de la Soc. de Biol.*, No. 25, Juillet 14, 1911, p. 91.
- HESS. Bemerkungen zur Pathologie der Herzneurosen. *Wien. Med. Wchnschr.*, Nr. 27, Juli 1, 1911, S. 1743.
- SACHS. Notes on Metastatic Growths of the Central Nervous System. *N. Y. Med. Rec.*, July 1, 1911, p. 18.

CLINICAL NEUROLOGY

GENERAL—

- DEJERINE. Clinique des maladies du système nerveux (suite et fin). *Archiv internat. de Neurol.*, Juillet 1911, p. 1.
- IBRAHIM. Pathologische Bedingungsreflexe als Grundlage neurologischer Krankheitsbilder. *Neurol. Centralbl.*, Nr. 13, Juli 1, 1911, S. 710.
- ASCENZI. Sur le Tic dit de Salaam. *Rev. Neurol.*, No. 12, Juin 30, 1911, p. 725.
- MÜNZER. Über die Erscheinungsformen des Marasmus bei Hirnerkrankungen (cerebraler Marasmus) und die Möglichkeiten seines Zustandekommens. *D. Ztschr. f. Nervenheilk.*, Bd. 42, H. 1-2, 1911, S. 42.
- WILLIAMS. Chronic Headache: Neurological Advances regarding its Diagnosis and Treatment. *Med. Press*, July 12, 1911, p. 38.
- KREIBICH. Weitere Beiträge zur abnormen Hautempfindlichkeit. *Archiv f. Dermatol. u. Syphil.*, Bd. cviii., H. 1-2, 1911, p. 41.

AUERBACH. Die Hauptursachen der häufigsten Lähmungstypen. *Samm. klin. Vortr.*, Nr. 633-634 (*Intern. Med.*, Nr. 293-294), 1911, p. 147.

SAVOUREUX. Une Observation d'Hérédité Polymorphe. *L'Encephale*, No. 7, July 1911, p. 50.

CAMP. The Diagnostic Value of Dyschromatopsia in Nervous Diseases. *Journ. Nerv. and Ment. Dis.*, Vol. xxxviii, No. 6, June 1911, p. 321.

MUSCLES—

DEJERINE and HEUYER. Myopathie atrophique à type scapulaire. (Soc. de Neurol.) *Rec. Neurol.*, No. 12, Juin 30, 1911, p. 780.

BATTEN. Progressive Spinal Muscular Atrophy of Infants and Young Children. *Brain*, Part cxxxii, Vol. xxxiii, 1911, p. 433.

NOICA and ENESCU. Ein Fall von Myasthenie mit Augenerscheinungen. *Klin. Monatsbl. f. Augenheilk.*, Mai-Juni 1911, p. 575.

GRUND. Zur Frage des Vorkommens erworbener Myotonie. *D. Ztschr. f. Nervenheilk.*, Bd. 42, H. 1-2, 1911, S. 110.

CYRIAX. On Reflex Contraction of Muscles associated with Pulmonary Disease. (Preliminary Contribution.) *Med. Rec.*, Vol. 79, No. 24, June 17, 1911, p. 16-7.

BABINSKI and JARKOWSKI. Sur l'excitabilité idio-musculaire et sur les réflexes tendineux dans la Myopathie progressive primitive. (Soc. de Neurol.) *Rec. Neurol.*, No. 12, Juin 30, 1911, p. 778.

BOURGUIGNON and HUET. Réactions électriques des muscles dans deux cas de Myopathie. (Soc. de Neurol.) *Rec. Neurol.*, No. 12, Juin 30, 1911, p. 793.

NERVES—

TAYLOR. A Case of Brachial Birth Palsy six years after Operation. *Journ. Nerv. and Ment. Dis.*, Vol. 38, No. 6, June 1911, p. 364.

PREOBRSCHENSKY. Ein Fall von Neurofibromatose. *D. Ztschr. f. Nervenheilk.*, Bd. 42, H. 1-2, 1911, S. 95.

LEVINSTEIN. Beitrag zur Schwierigkeit der Diagnose "Paralysis nervi recurrentis rheumatica" und zum Wert der Untersuchung mit Röntgenstrahlen. *Archiv f. Laryngol. u. Rhinol.*, Bd. 52, H. 1, 1911, p. 76.

SPINAL CORD—

MULLER. Laminectomy for Injury and Tumour of the Spinal Cord. *Annals of Surg.*, June 1911, p. 754.

MIDDLETON and TEACHER. Injury of the Spinal Cord due to Rupture of an Intervertebral Disc during Muscular Effort. *Glasgow Med. Journ.*, July 1911, p. 1.

JONASZ. Über eine Stichverletzung des Rückenmarks mit Brown-Séquard'schem Symptomenkomplex. *Wien. Med. Wochenschr.*, Nr. 28, Juli 8, 1911, S. 1801.

ZESAS. Über Harnstörungen nach Verletzungen der Wirbelsäule und des Rückenmarks. *Samm. klin. Vortr.*, Nr. 638 (*Chirurgie*, Nr. 179), 1911, p. 497.

SHIMAZONO. Über Erythromelalgie, zugleich einem Beitrag zur hydropischen Erweichung des Rückenmarks (Münich). *D. Ztschr. f. Nervenheilk.*, Bd. 42, H. 1-2, 1911, S. 167.

PIKE. The Condition of the Spinal Vasomotor Paths in Spinal Shock. *Journ. Nerv. and Ment. Dis.*, Vol. 38, No. 6, June 1911, p. 365.

MATTIROLO. Altération de la motilité et de la sensibilité à topographie radulaire dans un cas de ramollissement de la substance grise de la Moelle. (Soc. de Neurol.) *Rec. Neurol.*, No. 12, Juin 30, 1911, p. 805.

TAYLOR. Spastic Hemiplegia of the Right Arm; Hemilaminectomy with Posterior Root Section. *Journ. Nerv. and Ment. Dis.*, Vol. 38, No. 6, June 1911, p. 359.

TAYLOR. A Case of Spastic Diplegia; Hemilaminectomy; Posterior Root Section. *Journ. Nerv. and Ment. Dis.*, Vol. 38, No. 6, June 1911, p. 358.

BOECKEL. Des fractures du rachis cervical sans symptômes médullaires (à suivre). *Rev. de Chir.*, No. 6, Juin 10, 1911, p. 649.

DEJERINE. Un cas de radiculite cervico-dorsale. *Prog. Méd.*, No. 26, Juillet 1, 1911, p. 313.

Tabes Dorsalis.—HARRIS. Juvenile Tabes. *Proc. Roy. Soc. of Med. (Neurol. Section)*, June 1911, p. 50.

ESHNER. Conjugal Tabes Dorsalis. *Journ. Amer. Med. Assoc.*, Vol. lvi, No. 24, June 17, 1911, p. 1797.

STIEFLER. Die Dupuytren'sche Contractur als trophische Störung im Symptomenbilde einer Tabes dorsalis. *Med. Klinik*, Nr. 26, Juni 25, 1911, S. 1000.

- FORSTER. Resection of the Posterior Nerve Roots of Spinal Cord. *Lancet*, July 8, 1911, p. 76.
- GULEKE. Erfahrungen mit der Foerster'schen Operation bei gastrischen Krisen. *Archiv f. Klin. Chir.*, Bd. 95, H. 3, 1911, S. 495.
- HINDS HOWELL. Gastric Crises in ? Tabes. Division of Posterior Roots. *Proc. Roy. Soc. of Med.* (Neurol. Sec.), June 1911, p. 48.
- GROVES. On the Division of the Posterior Spinal Nerve Roots. *Lancet*, July 8, 1911, p. 79.
- GROVES. On the Resection of the Posterior Spinal Nerve Roots. *Bristol Med.-Chir. Journ.*, Vol. xxix., No. 112, June 1911, p. 105.
- Poliomyelitis Anterior Acuta.**—MARSH. Epidemic Anterior Poliomyelitis; Its Symptoms and Treatment; with a Review of Recent Investigations into the Experimental Disease in Monkeys. *Brit. Journ. of Children's Dis.*, Vol. viii., No. 91, July 1911, p. 300.
- BATTEN. The Epidemiology of Poliomyelitis. *Proc. Roy. Soc. of Med.* (Epidemiol. Section), June 1911, p. 198.
- BABONNEIX and PASTIA. Contribution à l'étude clinique de la polyomyélite expérimentale. *Compt. Rend. d. l. Soc. de Biol.*, No. 25, Juillet 14, 1911, p. 78.
- RÖMER. Über eine der Kinderlähmung des Menschen sehr ähnliche Erkrankung des Meerschweins. *Deut. Med. Wchnschr.*, No. 26, Juni 29, 1911, S. 1209.
- RÖMER. Nachlese aus der experimentellen Erforschung der Poliomyelitis acuta. *Med. Klinik*, Nr. 28, Juli 9, 1911, S. 1069.
- JELLIFFE. The Meningeal Forms of Epidemic Polioencephalomyelitis. *Journ. Amer. Med. Assoc.*, Vol. lvi., No. 25, June 24, 1911, p. 1867.
- HUFFMAN. The Etiology of Epidemic Poliomyelitis and its Possible Relation to Beriberi. *Med. Rec.*, Vol. 79, No. 24, June 17, 1911, p. 1095.
- MORSE. Scurvy in Infantile Paralysis. *Pediatrics*, Vol. xxiii., No. 6, June 1911, p. 363.
- ZADIK. Zwei Fälle von Poliomyelitis anterior luetica beim Erwachsenen. *Berl. klin. Wchnschr.*, No. 28, Juli 10, 1911, S. 1285.
- MASSARY. Paralyse Radiale, à type de Paralyse Saturnine, due à une Poliomyélite antérieure chronique cervicale chez des Syphilitiques. (Soc. de Neurol.) *Rev. Neurol.*, No. 12, Juin 30, 1911, p. 767.
- Amyotrophic Lateral Sclerosis.**—KINDBERG and CHATELIN. Trois cas de Sclérose latérale amyotrophique. (Soc. de Neurol.) *Rev. Neurol.*, No. 12, Juin 30, 1911, p. 789.
- WOODS. Trauma as a Cause of Amyotrophic Lateral Sclerosis. *Journ. Amer. Med. Assoc.*, Vol. lvi., No. 25, June 24, 1911, p. 1876.
- Landry's Paralysis.**—MOSNY and MOUTIER. Paralyse ascendante aiguë (syndrome de Landry) avec encéphalo-myélo-névrite chez une tuberculeuse. *Archiv f. Méd. Exp. et d'Anat. Path.*, Tome xxiii., No. 3, Mai 1911, p. 284.
- Disseminated Sclerosis.**—GRAINGER STEWART. Pseudobulbar Paralysis of Doubtful Origin, probably Disseminated Sclerosis. *Proc. Roy. Soc. of Med.* (Neurol. Section), June 1911, p. 46.
- BATTEN. Slowly Progressive Right Hemiplegia suggesting Tumour (Operation—No Tumour found). *Proc. Roy. Soc. of Med.* (Neurol. Section), June 1911, p. 45.
- Syringomyelia.**—FEARNSIDES. Syringomyelia, with Symptoms precipitated by Trauma. *Proc. Roy. Soc. of Med.* (Neurol. Section), June 1911, p. 34.
- Spondylitis.**—BUZZARD. Spondylose Rhizomélitique. *Proc. Roy. Soc. of Med.* (Neurol. Section), June 1911, p. 42.
- BATTEN. Spondylose Rhizomélitique. *Proc. Roy. Soc. of Med.* (Neurol. Section), June 1911, p. 40.
- HARRIS. Spondylitis, with Progressive Muscular Contracture. *Proc. Roy. Soc. of Med.* (Neurol. Section), June 1911, p. 42.
- ROLLESTON and HUMPHRY. Rigidity of the Spine. *Proc. Roy. Soc. of Med.* (Clinical Section), June 1911, p. 146.
- BRAIN—**
- Meningitis.**—REMLINGER. Sur une forme de méningite cérébro-spinale purulente et aseptique. *Gaz. des Hôp.*, No. 73, Juin 29, 1911, p. 1125.
- LESZYNSKY. A Case of Meningomyelitis with Recovery. *Journ. Nerv. and Ment. Dis.*, Vol. xxxviii., No. 6, June 1911, p. 362.
- FARNELL. Residuals of Fracture of Base of the Skull, with Accompanying Meningitis. *Journ. Nerv. and Ment. Dis.*, Vol. 38, No. 6, June 1911, p. 361.
- MERKEL. Trauma und Meningitis. *Munch. Med. Wchnschr.*, No. 29, Juli 18, 1911, S. 1545.

- FREDERIC. Sur un cas de meningite saturnine avec pseudo-syndrome de Weber incomplet. *Journ. de Méd.*, No. 28, Juillet 1, 1911, p. 513.
- STACKE. Die eitrige labyrinthäre Meningitis und ihre operative Heilbarkeit. *Deut. Med. Wchnschr.*, No. 26, Juni 29, 1911, S. 1213.
- PRASEK and ZATELLI. Ein Beitrag zur Kenntnis der durch tier-pathogene Bazillen der Influenzagruppe hervorgerufenen eitrigen Meningitis. *Wien. klin. Wchnschr.*, No. 26, Juni 29, 1911, S. 932.
- DANIELOPOLU et IANCOVESCU. La réaction au taurocholate dans les méningites. Modification de la technique. *Compt. Rend. d. l. Soc. de Biol.*, No. 23, Juin 24, 1911, p. 1055.
- SCHWARZ and BERTELS. Über "Meningitis" carcinomatosa. *D. Ztschr. f. Nervenheilk.*, Bd. 42, H. 1-2, 1911, S. 85.
- SIMONELLI. Carcinomatosi metastatica diffusa della dura madre. *Riv. di Patol. nerv. e ment.*, Vol. xvi., fasc. 6, Giugno 1911, p. 335.
- MOTTON. Pachymeningitis in a Dog. *Journ. Comp. Path. and Therap.*, Vol. xxiv., Part 2, June 1911, p. 142.
- Abscess.**—WATSON-WILLIAMS. Chronic Suppurative Mastoiditis, with Abscesses in the Left Temporo-sphenoidal and Frontal Lobes. *Proc. Roy. Soc. of Med.* (Otol. Section), June 1911, p. 134.
- Tumours.**—WILLIAMS. Neoplasms within the Skull: their early Diagnosis and Sole Treatment. *Amer. Journ. Med. Sc.*, July 1911, p. 42.
- ALQUIER and KLARFELD. Sur le diagnostic des tumeurs de la protubérance annulaire. *Gaz. des Hôp.*, No. 72, Juin 27, 1911, p. 1109.
- ALQUIER and KLARFELD. Sur le diagnostic des tumeurs de la protubérance annulaire. *Gaz. des Hôp.*, No. 75, Juillet 4, 1911, p. 1157.
- CUSHING and JACOBSON. Distortions of the Visual Fields in Cases of Brain Tumour. *Bullet. of Johns Hopk. Hosp.*, Vol. xxii., No. 243, June 1911, p. 190.
- JOSEFSON. Einige Fälle von Lokalisierten Gehirnafektionen. *D. Ztschr. f. Nervenheilk.*, Bd. 42, H. 1-2, 1911, S. 57.
- J. STEWART. A Subtemporal Decompression Operation for Intracranial Pressure. *Brit. Med. Journ.*, July 1, 1911, p. 15.
- LOWENBURG. Case showing Symptoms of Intracranial Pressure. *Archiv of Pediat.*, No. 6, June 1911, p. 523.
- M'FADYEAN. Cholesteatoma in the Brain of a Horse. *Journ. Comp. Path. and Therap.*, Vol. xxiv., Part 2, June 1911, p. 137.
- Aphasia.**—MAYENDORF. Die aphasischen Symptome und ihre kortikale Lokalisation. Leipzig, 1911.
- TAIT. Congenital Deficiency of Speech Areas. (Congenital Aphasia?) *Brit. Med. Journ.*, July 22, 1911, p. 160.
- Hemiplegia.**—BURROWS. Early Cardiac Paralysis and Hemiplegia in Diphtheria. *Brit. Journ. of Children's Dis.*, Vol. viii., No. 91, July 1911, p. 311.
- TOUCHE. Double hémiplegie infantile avec contracture en flexion des membres supérieurs et inférieurs. Symétrie et égalité bilatérale des déformations. Por-encéphalie de l'hémisphère droit. Atrophie simple de l'hémisphère gauche. (Soc. de Neurol.) *Rev. Neurol.*, No. 12, Juin 30, 1911, p. 777.
- RASCHOFKY. Über einen mit Hemiplegie komplizierten Fall von Typhus abdominalis. *Wien. Med. Wchnschr.*, Nr. 29, Juli 15, 1911, S. 1863.
- Syphilis.**—REUBEN. Hereditary Syphilis and the Wassermann Reaction. *Archiv of Pediat.*, No. 6, June 1911, p. 484.
- GUTMANN. Reinfectio syphilitica oder Pseudoprimäraffekt. *Berl. klin. Wchnschr.*, Nr. 28, Juli 10, 1911, S. 1282.
- HANNARD and GAYET. De la Paralysie Générale et de la Tabo-Paralysie Conjugales dans le Département du Nord, 1871-1909. *Ann. Med.-Psychol.*, No. 1, Juillet-Août 1911, p. 36.
- DUPRÉ and DEVAUX. Abolition des réflexes rotuliens et achilléens et Troubles vésicaux sans lymphocytose chez une enfant hérédo-syphilitique. (Soc. de Neurol.) *Rev. Neurol.*, No. 12, Juin 30, 1911, p. 783.
- MINOR. Vorläufiger Bericht an S. Exzellenz den Wirkl. Geh. Rat Herrn Prof. P. Ehrlich über 15 mit Salvarsan behandelte Fälle von syphilitischen Erkrankungen des Zentralnervensystems. *Neurol. Centralbl.*, Nr. 14, 1911, S. 769.
- SAENGER. Über Neurorezidive nach Salvarsan. *Neurol. Centralbl.*, Nr. 14, 1911, S. 796.
- M'INTOSH and FILDES. The Permanence of the Cure of Syphilis by "606." *Lancet*, July 22, 1911, p. 213.
- PELISSIER. L'emploi du 606 dans les affections du Système nerveux d'origine syphilitique. *L'éphale*, No. 7, July 1911, p. 61.

- VOGT. Bemerkungen über die Anwendung des Salvarsans in der Neurologie. *Neurol. Centralbl.*, Nr. 14, 1911, S. 787.
- WOLBARST. A Comparative Study of a Case of Paresis and one of Tabes Dorsalis after the administration of Salvarsan. *N.Y. Med. Journ.*, July 1, 1911, p. 22.
- BUNCH. Hereditary Syphilis and its Treatment by Arseno-Benzol ("606"). *Practitioner*, Vol. lxxvii., No. 1, July 1911, p. 73.
- MUCHA. Die Salvarsanbehandlung der Syphilis. *Wien. klin. Wchnschr.* Nr. 27, July 6, 1911, S. 963.
- FINCKH. The Treatment of Syphilis by Salvarsan. *Austral. Med. Gaz.*, May 20, 1911, p. 238.
- MILLARD. Salvarsan in Syphilis. Notes on Sixty-five Cases treated at the Coast Hospital, Sydney. *Austral. Med. Gaz.*, May 20, 1911, p. 241.
- JULIUSBERG and OPPENHEIM. Spastische Spinalerkrankung bei Lucs nach Salvarsan. *Münch. Med. Wchnschr.*, No. 29, Juli 18, 1911, S. 1558.
- V. ZEISSL. Einzelne interessante, mit Salvarsan behandelte Luesfälle. Wie sollen wir die Syphilis jetzt behandeln. *Wien. Med. Wchnschr.*, Nr. 27, Juli 1, 1911, S. 1737.
- BIGGS. Syphilitic Disease of the Nose treated with "606." *Proc. Roy. Soc. of Med.* (Otol. Section), June 1911, p. 121.
- GIBSON. The Intravenous Administration of Salvarsan. *Ind. Med. Gaz.*, Vol. xli., No. 6, June 1911, p. 217.
- REASONER. A Simple Technic for Salvarsan Injection. *Journ. Amer. Med. Assoc.*, Vol. lvi., No. 24, June 17, 1911, p. 1804.
- JOSEPH. On the Formation of Precipitates after the Intravenous Injection of Salvarsan. *Journ. of Exper. Med.*, Vol. xiv., No. 1, July 1, 1911, p. 83.
- SCHINDLER. Über "Joha" ein 40 proz. Dioxydiamidoarsenobenzol. *Wien. Med. Wchnschr.*, Nr. 28, July 8, 1911, S. 1804.
- COLE and WINTHROP. The Status of Salvarsan in Pellagra, based on the Reports of Twenty-one Collected Cases. *Journ. Amer. Med. Assoc.*, Vol. lvi., No. 24, June 17, 1911, p. 1794.
- GULLAND. Case of Lymphadenoma treated by Salvarsan. *Med. Press*, July 12, 1911, p. 43.
- CHAMBRELENT and CHEVRIER. Recherche de l'arsenic dans le lait d'une chèvre soumise à une injection intra-veineuse de salvarsan. *Compt. Rend. d. l. Soc. de Biol.*, No. 25, Juillet 14, 1911, p. 136.
- ABELIN. Über eine neue Methode, Salvarsan im Urin nachzuweisen. *Münch. med. Wchnschr.*, No. 29, Juli 18, 1911, S. 1566.

GENERAL AND FUNCTIONAL DISEASES—

- Epilepsy.**—SCOTT. The Cessation of Petit Mal through the Removal of Adenoids. *Pediatrics*, Vol. xxiii., No. 6, June 1911, p. 334.
- TINEL and CAIN. Secousses myocloniques du membre inférieur, équivalent jacksonien au cours d'une Monoplégie corticale. (Soc. de Neurol.) *Rev. Neurol.*, No. 12, Juin 30, 1911, p. 799.
- Chorea.**—JOLLY. Zur Lehre von der Chorea minor und den Choreopsychosen. *Wien. klin. Wchnschr.*, Nr. 29, Juli 20, 1911, S. 1046.
- MAYERHOFER. Ueber die günstige therapeutische Beeinflussung eines chronischen Falles von schwerer Chorea minor im Kindesalter durch Salvarsan. *Wien. klin. Wchnschr.*, Nr. 27, Juli 6, 1911, S. 976.
- Hysteria.**—MATHIEU. Les vomissements hystériques, leurs causes et leur traitement. *Journ. des Prat.*, No. 27, Juillet 8, 1911, p. 417.
- Neurasthenia.**—MITCHELL. Postoperative and Postanæsthetic Neurasthenias and Psychoses. *Amer. Journ. of Med. Sc.*, July 1911, p. 1.
- SALINGER. The Traumatic Neuroses. *Therap. Gaz.*, June 1911, p. 395.
- Neuralgia.**—KILVINGTON. Trigeminal Neuralgia. *Austral. Med. Journ.*, Vol. xvi., Nr. 5, May 20, 1911, p. 207.
- BUNTS. Trifacial Neuralgia. *Cleveland Med. Journ.*, Vol. x., June 1911, p. 507.
- KELLER. Alcohol Injection in Trifacial Neuralgia. *N.Y. Med. Journ.*, July 1, 1911, p. 14.
- HARRIS. Tic Douloureux illustrating the Anæsthesia produced by Alcohol Injection of the Superior Maxillary and Supra-orbital Nerves. *Proc. Roy. Soc. of Med.* (Neurol. Section), June 1911, p. 52.
- Neuritis.**—BING. Pathogenese, Diagnose und Therapie der Polyneuritis. *Med. Klinik*, H. 6, 1911, S. 143.
- JOLTRAIN and LAROCHE. Névrite subaiguë tuberculeuse non folliculaire à forme hydropigène. Constatacion des bacilles de Koch dans le parenchyme rénal. *Archiv f. Med. Exp. et d'anat. path.*, Tome xxiii., No. 3, Mai 1911, p. 310.

- STIEGLITZ. The Treatment of Neuritis with the Hot-air Douche. *Med. Rec.*, Vol. lxxx., No. 2, July 8, 1911, p. 73.
- COURTADE. La sclérotique et son traitement électrique. *Journ. de Méd.*, No. 26, Juillet 1, 1911, p. 515.
- Megrim.**—SHIONOYA. Ein Fall von rezidivierender Oculomotoriuslähmung (Migraine ophthalmoplégique) mit Autopsie. *D. Ztschr. f. Neurologik.*, Bd. 42, H. 1-2, 1911, S. 155.
- Paralysis Agitans.**—KLIPPEL and MONIER-VINARD. Syndrome paratonique ou forme fruste de la maladie de Parkinson. (Soc. de Neurol.) *Rec. Neurol.*, No. 12, Juin 30, 1911, p. 774.
- Exophthalmic Goitre, Cretinism, etc.**—JABOULAY. Goitre exophthalmique. *Journ. des Prat.*, No. 27, Juillet 8, 1911, p. 419.
- BERNHARDT. Basedow'sche Krankheit und Augenmuskellähmung. *Neurol. Centralbl.*, Nr. 13, Juli 1, 1911, S. 796.
- WYNTER. Graves's Disease in a Boy, commencing at the age of Ten. *Proc. Roy. Soc. of Med.* (Clinical Section), June 1911, p. 155.
- KLOSE. Experimentelle Untersuchungen über die Basedow'sche Krankheit. *Archiv f. Klin. Chir.*, Bd. 95, H. 3, 1911, S. 649.
- PIERRE MARIE, CLUNET and RAULOT-LAPOINTE. Radiothérapie du Goitre Exophthalmique. (Soc. de Neurol.) *Rec. Neurol.*, No. 12, Juin 30, 1911, p. 801.
- R. MCCARRISON. A Summary of Further Experimental Researches on the Etiology of Endemic Goitre. (Second Series.) *Proc. Roy. Soc.*, Feb. 28, 1911, p. 335.
- CHAMPION and ALDRIDGE. Intrathyroid Haemorrhage followed by Acute Dyspnoea and Death. *Brit. Med. Journ.*, July 15, 1911, p. 169.
- BONNEY. A Case of Acute Inflammation of the Thyroid Gland. *Lancet*, July 15, 1911, p. 155.
- HOBART. A Case of Cretinism. *Pediatrics.*, Vol. xxiii., No. 6, June 1911, p. 399.
- ROUSSY and CHATELIN. Un Cas de Myxoedème franc d'origine syphilitique chez une femme de 69 ans. (Soc. de Neurol.) *Rec. Neurol.*, No. 12, Juin 30, 1911, p. 785.
- CHARPENTIER and JABOUILLE. Nanisme myxoédémateux. Absence de corps thyroïde et d'hypophyse. Examen du squelette. *L'Encéphale*, No. 7, July 1911, p. 41.
- Tetany.**—FUCHS. Analogien im Krankheitsbilde des Ergotismus und der Tetanie. *Wien. Med. Wochenschr.*, Nr. 29, Juli 15, 1911, S. 1854.
- Acromegaly.**—BABONNEIX. Déformations du type acromégalique chez un jeune homme de dix-sept ans. *Gaz. des H. p.*, No. 70, Juni 22, 1911, p. 1077.
- ELLIS. The Urine in a Case of Acromegaly. *Journ. Amer. Med. Assoc.*, Vol. lvi., No. 25, June 24, 1911, p. 1870.
- Addison's Disease.**—STUMPKE. Beziehungen zwischen der Hyperpigmentierung der Haut bei Morbus Addisonii und der Funktion der Nebennieren. *Munch. Med. Wochenschr.*, No. 29, Juli 15, 1911, S. 1565.
- GALLAIS. Surrénalite Chronique avec Tumeur Pigmentaire de l'Iris Droit et Myosis Unilatéral Droit. Accès Périodiques d'Asthénie Aiguë avec Hallucinations et d'Agitation Intellectuelle et Kinétique. *Rec. Neurol.*, No. 12, Juin 30, 1911, p. 717.
- Tetanus.**—LIELL. Traumatic Tetanus: Recovery Following the Administration of Tetanus Antitoxin. *Journ. Amer. Med. Assoc.*, Vol. lvii., No. 1, July 1, 1911, p. 15.
- Alcoholism, etc.**—ROSENWASSER. The Drink Habit, with Special Reference to Office Treatment. *Med. Rec.*, Vol. 80, No. 2, July 8, 1911, p. 65.
- LEWIS. Delirium Tremens in a Boy of Twelve. *Archiv of Pediat.*, No. 6, June 1911, p. 526.
- SPECIAL SENSES AND CRANIAL NERVES.**—
- W. MACDOUGALL. On the Relations between Corresponding Points of the two Retinae. *Brain*, Part cxxxii., Vol. xxxiii., 1911, p. 371.
- KRÜGER. Über ophthalmoskopisch nachweisbare Gefäßveränderungen bei zentralem Skotom infolge Tabak-Alkohol-Amblyopie und Arteriosklerosis cerebri. *Klin. Monatsh. f. Augenheilk.*, Mai-Juni 1911, p. 579.
- CORDS. Adrenalinmydriasis bei Sympathicus- und Trigemini-lähmung. *Neurol. Centralbl.*, Nr. 13, Juli 1, 1911, S. 723.
- BABINSKI. Du Vertige Voltaïque dans les affections de l'appareil vestibulaire. (Soc. de Neurol.) *Rec. Neurol.*, No. 12, Juin 30, 1911, p. 780.
- JENKINS. Labyrinthine Vertigo (Menière's Symptom—Non-infective) treated by Operation. *Proc. Roy. Soc. of Med.* (Otol. Section), June 1911, p. 116.

- SAUNDERS. Unilateral Paralysis of Ninth, Tenth and Eleventh Cranial Nerves. *Proc. Roy. Soc. of Med. (Neurol. Section)*, June 1911, p. 51.
 KATO. Über die Bedeutung der Tastlähmung für die topische Hirndiagnostik. *D. Ztschr. f. Nervenheilk.*, Bd. 42, H. 1-2, 1911, S. 128.

MISCELLANEOUS SYMPTOMS AND CASES—

- M'WALTER. Printers' Palsy (Chronic Antimonial Poisoning). *Journ. Roy. Instit. Pub. Health*, Vol. xix., No. 7, July 1911, p. 413.
 SNOVER. Chronic Lead-Poisoning. Report of a Case. *Journ. Amer. Med. Assoc.*, Vol. lvi., No. 24, June 17, 1911, p. 1799.
 CASAMAJOR. Bromide Intolerance and Bromide Poisoning. *Journ. Nerv. and Ment. Dis.*, Vol. 38, No. 6, June 1911, p. 345.
 CASTOR. Drugs and Drug Habits in Burma. *Ind. Med. Gaz.*, Vol. xlv., No. 6, June 1911, p. 209.
 KONRIED. Zwei Fälle von Jodfieber. *Med. Klinik*, Nr. 28, Juni 25, 1911, S. 998.
 NOÏCA and LIVOOSKI. Un cas de Paraplégie spasmodique compliquée brusquement d'une Amaurose unilatérale. (Soc. de Neurol.) *Rev. Neurol.*, No. 12, Juin 30, 1911, p. 803.
 FAIRBANKS. Oxycephalus. *Pediatrics*, Vol. xxiii., No. 6, June 1911, p. 361.
 WILLIAMS. A Case of Ataxia in a Child aged three and a half years. *Bristol Med.-Chir. Journ.*, Vol. xxix., No. 112, June 1911, p. 163.
 CLARK. Remarks upon Some Phases of the Spastic-Paretic Syndrome of Cerebral Diplegia. *Journ. Nerv. and Ment. Dis.*, Vol. 38, No. 6, June 1911, p. 365.
 SIMON. Zur Kenntnis der Autolyse des Gehirns. *Hoppe-Seyler's Zeitschr. f. Physiol. Chem.*, Bd. 72, H. 5-6, Juni 1911, S. 463.
 NAGEOTTE-WILBOUCHEWITCH. Elévation congénitale de l'omoplate chez un enfant atteint de malformations multiples, hydrocéphalie avec vestiges d'hémiplégie. *Archiv de Méd. des Enf.*, No. 7, Juillet 1911, p. 481.
 SIMONSOHN. Dermatoneuromyositis chronica atrophicans. *Archiv f. Dermatol. u. Syphil.*, Bd. cviii., H. 1-2, 1911, p. 59.
 ERMAKOW. Sur l'Oligophasie post-comitiale. *Archiv internat. de Neurol.*, Juillet 1911, p. 14.
 ONODI. Die Eröffnung der Schädelhöhle und Freilegung des Gehirns von den Nebenhöhlen der Nase aus. *Ztschr. f. Laryngol. Rhinol. u. i. Grenz.*, Bd. iv., H. 1, 1911, p. 1.
 BATTEN. Congenital Brain Defect, with a curious Stamping Gait and Tendency to Fall Backward, suggestive of a Functional Astasia. *Proc. Roy. Soc. of Med. (Neurol. Section)*, June 1911, p. 33.
 TIRUMURTI. Multiple Cysticercus Cellulosa of the Brain. *Ind. Med. Gaz.*, Vol. xlv., No. 6, June 1911, p. 216.
 HIRSCHEL. Die Anästhesierung des Plexus brachialis bei Operationen an der oberen Extremität. *Munch. Med. Wchnschr.*, No. 29, Juli 18, 1911, S. 1555.
 KENNEDY. A Case for Diagnosis. *Journ. Nerv. and Ment. Dis.*, Vol. 38, No. 6, June 1911, p. 358.
 BASSOE. Compressed Air Disease. *Journ. Nerv. and Ment. Dis.*, Vol. 38, No. 6, June 1911, p. 368.
 FOIX. Hémisyn-drome bulbaire d'origine probablement périphérique intracranienne. (Soc. de Neurol.) *Rev. Neurol.*, No. 12, Juin 30, 1911, p. 792.
 LÉOPOLD-LEVI. Erysipèles à répétition et traitement thyroïdien. *Compt. Rend. de l. Soc. de Biol.*, No. 25, Juillet 14, 1911, p. 88.
 BONNIER. La tuberculose, maladie nerveuse. *Compt. Rend. d. l. Soc. de Biol.*, No. 25, Juillet 14, 1911, p. 72.
 TORRANCE. Foramitti's "Tubulization" Method of Nerve Suture. *N.Y. Med. Rec.*, June 17, 1911, p. 1190.
 WEBSTER. Infantile Scurvy. *Pediatrics*, Vol. xxiii., No. 6, June 1911, p. 362.

PSYCHIATRY

- MALONEY. On the Reckoning Test and its Uses in Psychiatry. *Rev. Neurol. and Psychiat.*, July 1911, p. 366.
 ANDERSON. Mental Hygiene in Childhood and Youth. *Pediatrics*, Vol. xxiii., No. 6, June 1911, p. 343.
 GODDARD. The Menace of the Feeble-Minded. *Pediatrics*, Vol. xxiii., No. 6, June 1911, p. 350.
 KERR. The Moral Training of Mentally Deficient Children. *Pediatrics*, Vol. xxiii., No. 6, June 1911, p. 329.

- RONCORINI. Le entità cliniche e la diagnosi in clinica psichiatrica. *Riv. di Patol. nerv. e ment.*, Vol. xvi., fasc. 6, Giugno 1911, p. 829.
- FÜRSTENHEIM. Die Beurteilung des Geisteszustandes jugendlicher Angeklagter. *Ztschr. f. Psychother. u. Med. Psychol.*, Bd. iii., H. 3, 1911, p. 158.
- LAIGNÉL-LAVASTINE, KAHN, and BENON. Démence et Hémiparésie par Ramollissements multiples d'origine Syphilitique stimulant la Paralyse générale. (Soc. de Psychiat.) *Rev. Neurol.*, No. 12, Juin 30, 1911, p. 806.
- BARBÉ. Hallucinations visuelles persistantes dans un cas de Confusion mentale. (Soc. de Psychiat.) *Rev. Neurol.*, No. 12, Juin 30, 1911, p. 806.
- BARBÉ and BENOIST. Paralyse générale à début Mélancolique. (Soc. de Psychiat.) *Rev. Neurol.*, No. 12, Juin 30, 1911, p. 807.
- DÉLMAS and BOUDON. Débilité morale avec Obsessions-impulsions multiples (Dromomanie, Dipsomanie, Sadisme, Masochisme) et accès subaigus d'Alcoolisme chronique suivis d'Idées fixes post-oniriques. (Soc. de Psychiat.) *Rev. Neurol.*, No. 12, Juin 30, 1911, p. 808.
- DAMAYE. Étude d'une épileptique en état d'obnubilation intellectuelle prédominante. *Rev. de Psychiat.*, No. 6, Juin 1911, p. 238.
- GUSTAVE MARTIN. La maladie du sommeil et ses troubles mentaux; démence trypanosomiasique et démence paralytique. *Annal. de l'Institut. Past.*, Tome xxv., No. 6, Juin 25, 1911, p. 463.
- BRIDON. Question de méthode. *Rev. de Psychiat.*, No. 6, June 1911, p. 222.
- BALLET. Délire d'interprétation sans hallucinations. *Journ. des Prat.*, No. 25, Juin 24, 1911, p. 388.
- WALLON and GAUTIER. Psychose infectieuse et confusion mentale, perte des notions de temps. *Rev. Neurol.*, No. 11, June 15, 1911, p. 661.
- DUPRÉ and TARRIUS. Puérilisme mental chez une maniaque. Rapports du puérilisme avec le délire d'imagination. *L'Encéphale*, No. 7, July 1911, p. 32.
- SÉRIEUX and LIBERT. La Bastille et les Prisonniers. Contribution à l'étude des asiles de sûreté. *L'Encéphale*, No. 7, July 1911, p. 18.
- BERNHEIM. Revision du Chapitre des Névroses. Des Psychonévroses. *L'Encéphale*, No. 7, July 1911, p. 1.
- LAGRIFFE. Contribution à l'étude du rôle des Méningites dans certaines affections mentales. *Presse méd.*, No. 51, Juin 28, 1911, p. 537.
- KIRBY. Race and Alcoholic Insanity. *Journ. Amer. Med. Assoc.*, Vol. lvii., No. 1, July 1, 1911, p. 9.
- DAUCHEZ. Essai médico-psychologique sur les causes et les remèdes de la criminalité infantile. *Archiv de Méd. des Enf.*, No. 7, Juillet 1911, p. 497.
- LESAGE and COLLIN. Un cas de délire infectieux sans confusion mentale et sans amnésie de fixation avec tétanie et polynévrite au cours d'une dothrémenterie peu pyrétique chez un enfant de treize ans, guérison rapide. *Archiv de Méd. des Enf.*, No. 7, Juillet 1911, p. 521.
- MAIRET. Le Vagabondage Constitutionnel ou des Dégénérés. *Ann. Med.-Psychol.*, No. 1, Juillet-Août 1911, p. 5.
- RÉGIS. Déséquilibre Mental et Divorce Affaire Par. . . Rapport Médico-Légal-Jugement. *Ann. Med.-Psychol.*, No. 1, Juillet-Août 1911, p. 59.
- TASTEVIN. L'Asthénie Post-Douloureuse et les Dysthénies périodiques (Psychose Périodique). *Ann. Med.-Psychol.*, No. 1, Juillet-Août 1911, p. 18.

TREATMENT.*

- SLOAN. Success or Failure in Electrotherapy: a Consideration of Some of the Causes. *Lancet*, July 1, 1911, p. 15.
- ERNEST JONES. Reflections on Some Criticisms of the Psychoanalytic Method of Treatment. *Amer. Journ. Med. Sc.*, July 1911, p. 47.
- BABINSKI, CHARPENTIER, and DELHERM. Radiothérapie de la sciatique. *Archiv d'Elect. Méd.*, No. 311, Juin 10, 1911, p. 481.
- WEISS. Die tabische Ataxie und ihre Behandlung. *Ztschr. f. Physikal. u. Diätet. Therapie*, Bd. 15, H. 7, Juli 1, 1911, p. 406.
- MILLIGAN. Trephining for Apoplexy. *Journ. Amer. Med. Assoc.*, Vol. lvi., No. 24, June 17, 1911, p. 1803.
- WOLLSTEIN. Serum Treatment of Influenzal Meningitis. *Journ. of Exper. Med.*, Vol. xiv., No. 1, July 1911, p. 73.
- FLEXNER. Influenzal Meningitis and its Serum Treatment. *Journ. Amer. Med. Assoc.*, Vol. lvii., No. 1, July 1, 1911, p. 16.

* A number of references to papers on Treatment are included in the Bibliography under individual diseases.

Bibliography

ANATOMY

- FUSE. Striae acusticae von v. Monakow beim Menschen. *Neurol. Centralbl.*, Nr. 16, Aug. 16, 1911, S. 912.
- SUDLER and BAUMGARTNER. The Gelatine Method of Preserving Anatomical Specimens, with especial Reference to Neurological Preparations. *Anat. Record*, Vol. v., No. 7, July 20, 1911, p. 339.
- ESPOSITO. Sulle cellule fenestrate e sui rapporti di elementi nervosi e non nervosi nei gangli spinali. *Riv. ital. di Neuropatol.*, Vol. iv., Fasc. 7, Luglio 1911, p. 321.
- CURTIS and HELMHOLZ. A Study of the Anterior Horn Cells of an Amelus, and their Relation to the Development of the Extremities. *Journ. Comp. Neurol.*, Vol. xxi., No. 4, Aug. 15, 1911, p. 323.
- HILTON. The Structure of the Nerve Cells of an Insect. *Journ. Comp. Neurol.*, Vol. xxi., No. 4, Aug. 15, 1911, p. 373.
- HILTON. Some Remarks on the Motor and Sensory Tracts of Insects. *Journ. Comp. Neurol.*, Vol. xxi., No. 4, Aug. 15, 1911, p. 383.
- S. PATON. The Reactions of the Vertebrate Embryo and Associated Changes in the Nervous System. *Journ. Comp. Neurol.*, Vol. xxi., No. 4, Aug. 15, 1911, p. 345.
- MONTANARI. Gli aspetti che assumono le neurofibrille a seconda della durata di fissazione del tessuto nervoso in piridina. *Zeitschr. f. Mikroskopie*, Bd. xxviii., H. 1, juli 1911, S. 22.
- KUNTZ. The Development of the Sympathetic Nervous System in the Amphibia. *Journ. Comp. Neurol.*, Vol. xxi., No. 4, Aug. 15, 1911, p. 397.
- RANSON. Non-medullated Nerve Fibres in the Spinal Nerves. *Amer. Journ. of Anat.*, Vol. xii., No. 1, July 15, 1911, p. 67.
- MARANO. I rapporti del nevroglio con le cellule e le fibre nervose, nel midollo spinale dei teleostei. *Ann. di Neurologia*, Anno xxix., Fasc. i.-ii., 1911, p. 1.
- D'ABUNDO. Ulteriori osservazioni sulla rigenerazione del tratto midollare dei gangli intervertebrali. *Riv. ital. di Neuropatol.*, Vol. iv., Fasc. 7, Luglio 1911, p. 289.
- LEONARD J. KIDD. Afferent Fibres in Ventral Spinal Roots. (Prelim. Commun.) *Brit. Med. Journ.*, Aug. 19, 1911, p. 359.

PHYSIOLOGY

- SHERRINGTON and SOWTON. On Reflex Inhibition of the Knee Flexor. *Proc. Roy. Soc.*, Series B, Vol. 84, 1911, p. 201.
- SHERRINGTON and SOWTON. Reversal of the Reflex Effect of an Afferent Nerve by altering the Character of the Electrical Stimulus Applied. *Zeitschr. f. allg. Physiol.*, Bd. 12, H. 4, 1911, p. 484.
- SIGNORELLI. Influence de l'acide lactique sur la fonction du centre respiratoire. *Archiv ital. de Biol.*, Tome lv., Fasc. 1, juillet 20, 1911, p. 119.
- OINUMA. Über die asphyktische Lähmung des Rückenmarkes strychninisirter Frösche. *Zeitschr. f. allg. Physiol.*, Bd. 12, H. 4, 1911, p. 439.
- BATTISTESSA. Sulle alterazioni dell'apparato reticolare interno delle cellule nervose dei gangli spinali in seguito ad avvelenamento da piombo e stricnina. *Riv. ital. di Neuropatol.*, Vol. iv., Fasc. 8, Agosto 1911, p. 345.
- GARREY. Dissociation of Inhibitory Nerve Impulses from Normal Conduction in the Heart by Means of Compression. *Amer. Journ. of Physiol.*, Vol. xxviii., No. v., Aug. 1911, p. 249.

- LEBETZKE and PALLAN. Effect of a fatigue stimulus on the action of gamma motor units. *Journ. de Physiol. et Path. gén.* Tome 11, No. 4, 1911, p. 319.
- LEBETZKE. Recherches sur la formation des réflexes tactiles et des sensations tactiles. *Archiv. f. Anat. u. Phys. u. Ges. Physiol.* 1911, p. 1.
- LEBETZKE. Über die Wirkung der Reizstärke. *Arch. f. Anat. u. Phys. u. Ges. Physiol.* No. 34, 1911, p. 113.
- LEBETZKE. Zur Technik der Untersuchung des Zentralnervensystems der Säuger. *Zentr. f. d. experim. Biol.* 1911, H. 1, p. 111.
- LEBETZKE. Die Pharmakologie des vegetativen Nervensystems. *Arch. f. Anat. u. Phys. u. Ges. Physiol.* No. 34, 1911, p. 113.
- JOHNSON, N. Lesions of motor neurons. *Neural Congress*, No. 15, Aug. 1, 1911, p. 134.
- LEBETZKE. Über die Wirkung der Reizstärke. *Zentr. f. d. experim. Biol.* 1911, H. 1, p. 111.

PSYCHOLOGY

- HIERSCHMANN. Zur Psychologie und Logik des Denkens. *Zentral. f. d. experim. Biol.* 1911, H. 1, p. 111.
- SEITZ. Willens- und Temperament. Eine Einführung. *Zentral. f. Psychol.* Bd. 1, H. 1, 1911, p. 111.
- STERN, BERNHARD. Die Aufmerksamkeit in der Physiologie und in der Psychologie. *Zentral. f. Psychol.* Bd. 1, H. 1, 1911, p. 111.
- MAGNAMARA. A Lecture on Psychology. *Lancet*, Aug. 12, 1911, p. 420.
- CHODZKO. Contribution à l'étude de la suggestibilité. *Annales de Psychol.* Tome xi, No. 42, juillet 1911, p. 172.
- GRAMATSCHEV. Le sommeil du Petit Enfant. *Annales de Psychol.* Tome xi, No. 42, juillet 1911, p. 172.
- VARENDONCKE. Les Troubles des Enfants dans un Procès Retentissant. *Annales de Psychol.* Tome xi, No. 42, juillet 1911, p. 172.
- GORDON. Asymetria. *Journ. Abnorm. Psychol.* Aug-Sept. 1911, p. 214.
- BURROW. Some Psychological Phases of Medicine. *Journ. Abnorm. Psychol.* Aug-Sept. 1911, p. 206.
- FRINK. Psychoanalysis of a Mixed Neurosis. *Journ. Abnorm. Psychol.* Aug-Sept. 1911, p. 166.
- ERNEST JONES. The Relationship between Dreams and Psychoneurotic Symptomata. *Amer. Journ. of Psychology*, Vol. lxviii, No. 1, July 1911, p. 57.
- LEVY-SOHL. Studien über die experimentelle Beeinflussung des Vorstellungsverlaufes. (Dritter Teil.) *Zentral. f. Psychol.* Bd. 50, H. 1 u. 2, 1911, S. 1.

PATHOLOGY

- SCALONE. Histologia del Ganglio di Gasser nelle nevralgie del trigemino. *Ann. di Neurologia*, Anno xxix, Fasc. I-xi, 1911, p. 17.
- TANAKA. Experimentelle Untersuchungen über die Herkunft der Körnchenzellen des Zentralnervensystems; zugleich ein Beitrag zur Kenntnis der Regeneration des Hirngewebes. *Beitrag. z. path. anat. u. allg. path.*, Bd. 50, H. 3, 1911, S. 553.
- LAFORA. Über das Vorkommen amyloider Körperchen im Innern der Ganglienzellen; zugleich ein Beitrag zum Studium der amyloiden Substanz im Nervensystem. *Farchow's Archiv*, Bd. 205, H. 2, 1911, S. 295.
- BETTS. On the Occurrence of Nodular Necroses (Drusen) in the Cerebral Cortex. A Report of Twenty Positive Cases. *Amer. Journ. of Insanity*, Vol. lxviii, No. 1, July 1911, p. 43.
- FARNELL. The Cerebro-spinal Fluid: its Cellular Elements and Globulin Content. *Amer. Journ. of Insanity*, Vol. lxviii, No. 1, July 1911, p. 23.

- FUMAROLA and TRAMONTI. Globulinreaktion, Albuminreaktion und Lymphozytose bei den organischen Erkrankungen des Nervensystems. *Monatssch. f. Psychiat. u. Neurol.*, Bd. xxx., H. 2, Aug. 1911, S. 99.
- CLAUDE and LOYEZ. Sur certaines angiectasies capillaires des centres nerveux. *Rev. Neurol.*, No. 15, août 15, 1911, p. 181.

CLINICAL NEUROLOGY

GENERAL—

- WILLIAMSON. The Value of the Vibrating Sensation in the Diagnosis of Diseases of the Nervous System. *Rev. Neurol. and Psychiat.*, Aug. 1911, p. 419.
- CORIAT. The Clinical Tests for Apraxia and their Value in the Diagnosis of Brain Disease. *Boston Med. and Surg. Journ.*, July 20, 1911, p. 89.
- STILLMANN. Edema of the Pia-Arachnoid. Its Nature, Significance, Relationship to and Association with Disease Processes. *Arch. of Int. Med.*, Vol. viii., No. 2, Aug. 15, 1911, p. 193.
- HEINE. Die forensische Bedeutung der Amnesie. *Vierteljahrsschrift f. gericht. Med.*, Juli 1911, p. 51.
- JELLIFFE and BRILL. Statistical Summary of Cases in Department of Neurology, Vanderbilt Clinic, for Ten Years—1900 to 1909. *Journ. Nerv. and Ment. Dis.*, Vol. xxxviii., No. 7, July 1911, p. 391.
- KITAJ. Apparat zur Messung des Kniesehnenreflexes (Patellarreflektometer). *Wien. med. Wchnschr.*, Nr. 30, Juli 22, 1911, S. 1910.
- KAPLAN. The Laboratory Findings in Neurological Manifestations. *N.Y. Med. Journ.*, July 22, 1911, p. 174.
- T. A. WILLIAMS. Nervous Disorders and the Neurologist in Relation to the Profession and the Public. *Med. Rec.*, July 22, 1911, p. 166.
- SPIELMEYER. Über die Alterserkrankungen des Zentralnervensystems. *Deutsch. med. Wchnschr.*, No. 30, Juli 27, 1911, S. 1377.
- SPIELMEYER. Über die Alterserkrankungen des Zentralnervensystems (Schluss). *Deutsch. med. Wchnschr.*, No. 31, Aug. 3, 1911, S. 1433.
- FÜRTH and LENK. Das Wesen der Totenstarre und ihre Lösung. *Wien. klin. Wchnschr.*, Nr. 30, Juli 27, 1911, S. 1079.
- CORNELIUS. Die Beziehungen der Nervenpunktlehre zur Balneologie. *Med. Klinik*, Nr. 35, Aug. 27, 1911, S. 1354.
- BAGLIONI and PILOTTI. Recherches névrologiques dans la rachistostovainisation humaine. *Archiv ital. de Biol.*, Tome lv., Fasc. 1, juillet 20, 1911, p. 82.

MUSCLES—

- ARCHANGELSKY and ABRIKOSOFF. Ein Fall von Myatonia congenita Oppenheim mit Autopsie. *Archiv f. Kinderheilk.*, Bd. 56, H. i.-iii., 1911, p. 101.
- GRIFFITH and SPILLER. Amyotonia Congenita: A Clinical and Pathological Study. *Amer. Journ. of Med. Sciences*, Vol. cxlii., No. 2, Aug. 1911, p. 165.
- SCHAFFER. Pseudobulbärparalyse, verursacht durch einseitigen corticalen Herd. *Zeitschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 6, H. 2, Juli 1911, S. 196.
- SARVONAT and ROUBIER. Les troubles neuro-musculaires dans l'intoxication par l'acide oxalique. Etude clinique et expérimentale. *Journ. de Physiol. et de Path. gén.*, Tome 13, No. 4, Juillet 15, 1911, p. 565.

NERVES—

- PETRÉN. Untersuchungen über das Vorkommen von "Vagotonus und Sympathikotonus." *Zeitschr. f. klin. Med.*, Bd. 73, H. 1 and 2, 1911, S. 27.
- BOUCHAUD. Traumatisme du nerf facial gauche. Paralyse flasque des muscles du front, avec conservation des réactions électriques. Parésie, légère contracture et mouvements spasmodiques des autres muscles. *Rev. Neurol.*, No. 13, juillet 15, 1911, p. 4.
- JACOBSON. Paralysis of the Upper Extremity due to Nerve Injuries. *Med. Rec.*, Aug. 19, 1911, p. 365.
- MILLS. Total Paralysis of the Brachial Plexus due to Traumatism causing Evulsion of the Component Roots of the Plexus. *Therap. Gaz.*, Aug. 1911, p. 539.

SPINAL CORD—

Fracture, Dislocation, etc.—WILLIAMS. Fracture of the Cervical Spine. *Journ. of Amer. Med. Ass.*, Vol. lvii., No. 4, July 22, 1911, p. 283.

EMERSEN. Fracture of Cervical Vertebrae, resulting in Hypotonia and Hypothermia. *Archiv of Int. Med.*, Vol. viii., No. 2, Aug. 15, 1911, p. 150.

GODKIN. Fracture Dislocation of the Spine without Paralysis. *Journ. of Roy. Army Med. Corps*, Vol. xvii., No. 2, Aug. 1911, p. 165.

ELY. Subluxation of the Atlas. *Annals of Surgery*, Part 223, July 1911, p. 20.

J. AND A. BOECKEL. Des fractures du Rachis cervical sans symptomes médullaires. [A suivre.] *Rev. de Chirurgie*, No. 7, juillet 10, 1911, p. 48.

Hæmatomyelia.—LAWATSCHEK. Ein Fall von Hæmatomyelie mit completer Leitungsunterbrechung bei einem Neugeborenen mit viermonatlicher Lebensdauer. *Archiv f. Kinderheilk.*, Bd. 56, H. i.-iii., 1911, p. 1.

Tabes Dorsalis.—S. A. K. WILSON. The Pathology of Two Cases of Tabetic Amyotrophy. *Rev. Neurol. and Psychiat.*, Aug. 1911, p. 401.

GARSON. The Frenkel System of Exercises for Tabes. *Brit. Med. Journ.*, Aug. 26, 1911, p. 420.

LOWINSKY. Zur Prophylaxe der Tabes dorsalis. *Med. Klinik*, Nr. 35, Aug. 27, 1911, S. 1350.

NEUMANN. Ueber Trichopilarmuskelkrisen bei Tabes dorsalis. *Wien. klin. Wchnschr.*, Nr. 31, Aug. 3, 1911, S. 1132.

SÉZARY. Pathogénie du tabes. La méningite parasymphilitique. *Presse méd.*, No. 66, août 19, 1911, p. 673.

STIEFLER. Beiträge zur Försterschen Operation. *Wien. klin. Wchnschr.*, Nr. 32, Aug. 10, 1911, S. 1151.

Poliomyelitis Anterior Acuta.—ALLEN STARR. The Prevention of Epidemics of Infantile Paralysis. *Med. Rec.*, Aug. 5, 1911, p. 259.

STEIN. A Case of Abortive Poliomyelitis. *Med. Rec.*, July 15, 1911, p. 129.

NETTER. Infantile Paralysis simulating Cerebro-spinal Meningitis. *Pediatrics*, Vol. xxiii., No. 7, July 1911, p. 407.

Anterior Poliomyelitis—note. *Bullet. of Johns Hopkins Hosp.*, Vol. xxii., Aug. 1911, p. 300.

MACKENZIE. Muscular Factor in Infantile Paralysis. *Australian Med. Journ.*, Vol. xvi., No. 6, June 20, 1911, p. 253.

ALSBERG. Casuistische Beiträge zur Klinik der Heine-Medinschen Krankheit. *Archiv f. Kinderheilk.*, Bd. 56, H. i.-iii., 1911, p. 39.

MEYER. Über die Heine-Medinsche Krankheit—spinale Kinderlähmung—in der Provinz Schleswig Holstein in den Jahren 1909 und 1910. *Archiv f. Kinderheilk.*, Bd. 56, H. i.-iii., 1911, p. 46.

Disseminated Sclerosis.—REICH. Beitrag zur Kenntnis der multiplen Sklerose (pseudosyringomyelitische Form). *Wien. med. Wchnschr.*, Nr. 31, Juli 29, 1911, S. 1966.

REICH. Beitrag zur Kenntnis der Multiplen Sklerose (pseudosyringomyelitische Form). (Schluss.) *Wien. med. Wchnschr.*, Nr. 32, Aug. 5, 1911, S. 2039.

LAMBRIOR and PUSCARIU. Un cas de sclérose en plaques avec ophtalmoplégie externe bilatérale et atrophie incomplète des nerfs optiques. *Rev. Neurol.*, No. 14, juillet 30, 1911, p. 84.

RAIN—

Meningitis.—GHON. Zur pathologischen Anatomie der Meningitis Weichselbaum und ihrer Diagnose. *Prag. med. Wchnschr.*, No. 30, Juli 27, 1911, S. 387.

VINCENZI. Bakteriologische Beobachtungen über den Meningococcus. *Centralbl. f. Bakteriol., Parasitenk., and Infektionskr.*, Bd. 59, H. 5/7, Juli 29, 1911, S. 499.

DUNN. Animal Experimentation in Relation to Epidemic Cerebro-spinal Meningitis. *Journ. Amer. Med. Assoc.*, Vol. lvii., No. 4, July 22, 1911, p. 259.

SNYDER and TYNDAL. A Case of Cerebro-spinal Meningitis. *Journ. Amer. Med. Assoc.*, Vol. lvii., No. 3, July 15, 1911, p. 213.

- RHEA.** Cerebro-spinal Meningitis due to Bacillus Influenzæ. A Report of Two Cases, from one of which the organism was obtained in pure culture from the circulating blood eighty-five days before death. *Archiv of Int. Med.*, Vol. viii., No. 2, Aug. 15, 1911, p. 133.
- HARVIER.** Méningite à Diplococcus crassus. *Compt. Rend. d. l. Soc. de Biol.*, No. 27, août 4, 1911, p. 266.
- KLEINSCHMIDT.** Beitrag zur Behandlung der Pneumokkenmeningitis. *Med. Klinik*, Nr. 31, Juli 30, 1911, S. 1195.
- WISEMAN.** A Report of Two Cases of Pneumococcus Meningitis. *Boston Med. and Surg. Journ.*, Aug. 3, 1911, p. 174.
- ROMANELLI.** Paralisi totale dell' oculo-motore comune sinistre per infiltrazione emorragica del nervo in un caso di meningite tubercolare. *Riv. ital. di Neuropatol.*, Vol. iv., Fasc. 8, Agnosto 1911, p. 356.
- ARCHANGELSKY.** Zur Frage über die Möglichkeit einer Heilung der Meningitis tuberculosa. *Jahrbuch f. Kinderheilk.*, Aug. 5, 1911, p. 155.
- FLEISCHMANN.** Ein Fall von Brown-Séquard'scher Lähmung, hervorgerufen durch Meningitis serosa spinalis circumscripta. *Neurol. Centralbl.*, Nr. 15, Aug. 1, 1911, S. 840.
- HAHN.** Klinischer Beitrag zur Lehre von der Pachymeningitis haemorrhagica interna im frühen Kindesalter. *Deutsch. Med. Wchnschr.*, No. 33, Aug. 17, 1911, S. 1518.
- MERKEL.** Trauma und Meningitis (Schluss). *Münch. Med. Wchnschr.*, No. 30, Juli 25, 1911, S. 1624.
- BLACKBURN.** Pachymeningitis interna. *Journ. Nerv. and Ment. Dis.*, Vol. xxxviii., No. 8, Aug. 1911, p. 467.
- BASKER.** Meningitis following Measles. *Lancet*, Aug. 19, 1911, p. 499.
- PIKE.** Permeating Mastoid Meningitis. *Practitioner*, Vol. lxxxvii., No. 2, Aug. 1911, p. 239.
- CLAUDE and SCHAEFFER.** Méningo-encéphalite syphilitique chronique avec atrophie cérébrale. *L'Encéphale*, No. 8, août 10, 1911, p. 127.
- STEPP.** Ueber Hirninfluenza. *Med. Klinik*, Nr. 34, Aug. 20, 1911, S. 1306.
- Abscess—STRAUSS.** Report of Two Cases of Occipital Abscess with Pupillary Phenomenon. *N.Y. Med. Journ.*, Aug. 12, 1911, p. 334.
- Cerebellum.—PRATI.** Di due fossette occipitali laterali con corrispondente ipertrofia delle tonsille cerebellari in un idiota. *Ann. di Freniat.*, Vol. xxi., Fasc. i., marzo 1911, p. 71.
- BÁRÁNY.** The Inter-relationship of the Vestibular Apparatus and the Cerebellum. (Abstract translation by A. R. Tweedie.) *Journ. of Laryngol., Rhinol., and Otol.*, Vol. xxvi., No. 8, Aug. 1911, p. 393.
- Tumours—R. T. WILLIAMSON.** "Cerebral Tumour (Affecting the Basal Ganglia on the Left Side and both Temporo-Sphenoidal Lobes: Flaccid Paralysis: Changes in the Spinal Posterior Nerve Root Fibres)". *Med. Chronicle*, Aug. 1911, p. 272.
- YOORHEES.** Brain Tumor. Report of Nine Cases. *Journ. of Amer. Med. Assoc.*, Vol. lvii., No. 5, July 29, 1911, p. 369.
- BURNS.** Diagnosis of Brain Tumours. *N.Y. Med. Journ.*, Aug. 5, 1911, p. 278.
- CUSHING.** Distortions of the Visual Fields in Cases of Brain Tumor: Second Paper, Dyschromatopsia in Relation to Stages of Choked Disc. *Journ. of Amer. Med. Assoc.*, Vol. lvii., No. 3, July 15, 1911, p. 200.
- MINGAZZINI.** Sui tumori del lobo temporale sinistro e dell' angolo ponto-cerebellare. *Riv. di Patol. nerv. e ment.*, Vol. xvi., Agnosto 1911, p. 457.
- RICCA.** Contributo allo studio del tumore dell' angolo ponto-cerebellare (Paraplegia-Comportamento dei nervi cranici). *Ann. di Neurologia*, Anno xxix., Fasc. i.-ii., 1911, p. 7.
- HAEGER.** Ausgebreitetes Endotheliom der inneren Meningen des Gehirns. *Monatssch. f. Psychiat. u. Neurol.*, Bd. xxx., H. 2, Aug. 1911, S. 86.
- BERNHARD SCHOLZ.** Über Geschmacksstörungen bei Tumoren der hinteren Schädelgrube. *Mitteil. a. d. Grenzgeb. d. Med. u. Chir.*, Bd. 23, H. 4, 1911, S. 637.

- CUSHING. The Control of Bleeding in Operations for Brain Tumours. *Annals of Surgery*, Part 223, July 1911, p. 1.
- HARMON SMITH. Some Cases of Optic Neuritis, benefited by operation upon the Sphenoidal Sinus and Posterior Ethmoidal Cells. *N. Y. Med. Journ.*, Aug. 5, 1911, p. 276.
- Aphasia**—BERGER. Über einen Fall von Totalaphasie. *Monatssch. f. Psychiat. u. Neurol.*, Bd. xxx., H. 2, Aug. 1911, S. 79.
- Hemiplegia**—ERMAKOW. Quelques remarques sur le vertige voltaïque chez les aliénés et les hémiplegiques. *Archiv. internat. de Neurol.*, Vol. ii., 9^e série, août 1911, p. 78.
- Syphilis**—KRÖBER. Beitrag zur Frage des ursächlichen Zusammenhangs der Syphilis mit der Idiotie. *Med. Klinik*, Nr. 32, Aug. 6, 1911, S. 1239.
- HOFFMANN. Über die Benennung des Syphiliserregers nebst Bemerkungen über seine Stellung im System. *Münch. Med. Wchnschr.*, No. 33, Aug. 15, 1911, S. 1769.
- BLUMENTHAL. Wassermann'sche Reaktion und experimentelle Kaninchensyphilis. *Berl. klin. Wchnschr.*, No. 32, Aug. 7, 1911, S. 1462.
- HOFFMANN. Die Übertragung der Syphilis auf Kaninchen mittels reingezuchteter Spirochäten vom Menschen. *Deutsch. Med. Wchnschr.*, No. 34, Aug. 24, 1911, S. 1546.
- BAERMANN. Zur subkutanen Syphilisimpfung niederer Affenarten (sekundäre Erscheinungen). *Münch. Med. Wchnschr.*, No. 30, Juli 25, 1911, S. 1614.
- PERUSSIA. Bleivergiftung und Wassermannsche Reaktion. *Deutsch. Med. Wchnschr.*, No. 34, Aug. 24, 1911, S. 1559.
- Salvarsan**—WEHNER. Über das Vorkommen spätluetischer Erscheinungen im Frühstadium der Syphilis nach Salvarsaninjektionen. *Münch. Med. Wchnschr.*, No. 32, Aug. 8, 1911, S. 1724.
- ROSENBAUM. A Preliminary Report of the Effect of Salvarsan on Syphilitic and Metasyphilitic Affections of the Eye and upon the Apparently Healthy Eyes of Syphilitics. *Med. Rec.*, July 22, 1911, p. 177.
- HÜFLER. Zur Technik der Salvarsanbehandlung. *Münch. Med. Wchnschr.*, No. 34, Aug. 22, 1911, S. 1802.
- EITNER. Intravenöse Salvarsaninjektionen. *Wien. Med. Wchnschr.*, No. 31, Juli 29, 1911, S. 1970.
- KNAUER. Zur Technik der intravenösen Salvarsaninjektion. *Münch. Med. Wchnschr.*, No. 34, Aug. 22, 1911, S. 1824.
- SLUSHER and BURCHELL. A Warning Concerning the Use of Salvarsan. *N. Y. Med. Journ.*, July 15, 1911, p. 139.
- WEHNER. Zur Frage der Konzentration der NaCl Lösung bei Salvarsaninfusionen. *Deutsch. Med. Wchnschr.*, No. 33, Aug. 17, 1911, S. 1523.
- LOXTON. Salvarsan in Almond Oil. *Brit. Med. Journ.*, July 29, 1911, p. 214.
- STRAUSS. Ein neuer Venentroker für intravenöse Injektionen. *Münch. Med. Wchnschr.*, No. 34, Aug. 22, 1911, S. 1825.
- HERBSMANN. Über intravenöse Salvarsaninjektionen ohne Reaktionserscheinungen. *Münch. Med. Wchnschr.*, No. 34, Aug. 22, 1911, S. 1803.
- FISCHER. Über einen Todesfall durch Encephalitis hämorrhagica im Anschluss an eine Salvarsaninjektion. *Münch. Med. Wchnschr.*, No. 34, Aug. 22, 1911, S. 1803.
- KANNENGIESSER. Zur Kasuistik der Todesfälle nach Salvarsanbehandlung. *Münch. Med. Wchnschr.*, No. 34, Aug. 22, 1911, S. 1806.
- ALMKVIST. Ein Fall von Encephalitis haemorrhagica acuta nach intravenöser Salvarsaninjektion. *Münch. Med. Wchnschr.*, No. 34, Aug. 22, 1911, S. 1809.
- HOFMANN. Ikterus mit letalem Ausgang nach Salvarsan. *Münch. Med. Wchnschr.*, No. 33, Aug. 15, 1911, S. 1773.
- AUER. Experiments with the Intravenous Injection of Salvarsan in Acid Solution. *Archiv of Int. Med.*, Vol. viii., No. 2, Aug. 15, 1911, p. 169.
- SPIETHOFF. Zur Frage der sauren od. alkalischen venösen Salvarsaninfusionen. *Münch. Med. Wchnschr.*, No. 32, Aug. 8, 1911, S. 1724.

- BORNSTEIN and BORNSTEIN. Über Salvarsan in der Milch. *Deutsch. Med. Wchnschr.*, No. 33, Aug. 17, 1911, S. 1520.
- ABELIN. Beginn und Dauer der Ausscheidung des Salvarsans durch den Urin nach intravenöser Injektion. *Münch. Med. Wchnschr.*, No. 33, Aug. 15, 1911, S. 1771.
- TURNBULL. Notes on a Case of Syphilis treated with "606." *Journ. of Roy. Army Med. Corps*, Vol. xvii., No. 2, Aug. 1911, p. 166.
- GORDON-HALL and TAYLOR. Some Further Observations on Salvarsan, or "606." *Journ. of Roy. Army Med. Corps*, Vol. xvii., No. 2, Aug. 1911, p. 167.
- CHIARI. Kasuistik der Salvarsanwirkung bei Lues der oberen Luftwege. *Berl. Klin. Wchnschr.*, No. 35, Aug. 28, 1911, S. 1587.
- HOFFMANN and JAFFÉ. Weitere Erfahrungen mit Salvarsan. *Deutsch. Med. Wchnschr.*, No. 29, Juli 20, 1911, S. 1337.
- GEYER. Beitrag zur "Therapia sterilisans magna" durch Salvarsan. *Deutsch. Med. Wchnschr.*, No. 33, Aug. 17, 1911, S. 1522.
- KREFTING. Ein sicherer Fall von Reinfectio syphilitica eines mit Salvarsan behandelten Patienten. *Deutsch. Med. Wchnschr.*, No. 31, Aug. 3, 1911, S. 1441.
- JOANNIDES. Die Wirkung des Salvarsans auf die Bilharzia. *Deutsch. Med. Wchnschr.*, No. 34, Aug. 24, 1911, S. 1551.
- HAHN. Die Behandlung der Chorea minor durch Salvarsan. *Deutsch. Med. Wchnschr.*, No. 34, Aug. 24, 1911, S. 1550.
- KROMAYER. Chronische Salvarsanbehandlung der Syphilis. *Deutsch. Med. Wchnschr.*, No. 34, April 24, 1911, S. 1547.
- DAVID. "606" et le nerf acoustique. *Presse méd.*, No. 58, juillet 22, 1911, p. 602.
- MARSHALL. Salvarsan ("606") in Syphilis; a Criticism. *N. Y. Med. Journ.*, July 15, 1911, p. 136.
- GOLDENBERG and KALISKI. Further Experiences with Salvarsan in Syphilis. *N. Y. Med. Journ.*, Aug. 12, 1911, p. 323.

GENERAL AND FUNCTIONAL DISEASES—

- Epilepsy.**—HUNT. Epilepsy and the Epileptic Temperament. *Med. Rec.*, Aug. 5, 1911, p. 261.
- MARCHAND and PETIT. État de mal épileptique chez un enfant de cinq jours. Mère atteinte d'imbécillité et d'épilepsie. Considérations pathogéniques. *Gaz. des Hôp.*, No. 90, août 10, 1911, p. 1339.
- RÉMOND and FONTAINE. Impulsions et Délire Conscients et Mnésiques chez les épileptiques. *Archiv d'Anthropol. Criminelle*, No. 211, juillet 15, 1911, p. 481.
- EBSTEIN. Die Epilepsie und andere Krampfformen in ihren ätiologischen Beziehungen zu den Erkrankungen der Verdauungsorgane. *Deutsch. Archiv f. klin. Med.*, Bd. 103, H. 5 and 6, 1911, S. 463.
- STEINER. Über die Beziehungen der Epilepsie zur Linkshändigkeit. *Monatssch. f. Psychiat. u. Neurol.*, Bd. xxx., H. 2, Aug. 1911, S. 119.
- MARGARIA. Contributo allo studio delle epilessie. Insorgenza contemporanea di accessi epilettici in fratello e sorella. *Ann. di Freniat.*, Vol. xxi., Fasc. 1, Marzo 1911, p. 64.
- BELLINI. Ipertermia, Iperidrosi e Poliuria—Caratteristiche di equivalenti epilettici in soggetto psicopatico-degenerato. *Ann. di Freniat.*, Vol. xxi., Fasc. i., Marzo 1911, p. 1.
- Hysteria.**—SALTER. Three Cases of Hysteria. *Australasian Med. Gaz.*, Vol. xxx., No. 6, June 20, 1911, p. 317.
- NOFER. Hysteria in a Girl of Seven Years. *N. Y. Med. Journ.*, Aug. 5, 1911, p. 285.
- DRYSDALE. An Interesting Case of Major Hysteria successfully treated by Re-education. *Cleveland Med. Journ.*, Vol. x., No. 7, June 1911, p. 579.
- NAAME. Pathogénie et traitement de l'hysterie. *Journ. de Méd. de Paris*, No. 31, août 5, 1911, p. 612.

- Neurasthenia.**—RÖPER. Heilerfolge bei Neurasthenia. *Monatssch. f. Psychiat. u. Neurol.*, Bd. xxx., H. 2, Aug. 1911, S. 134.
- Neuralgia.**—BLUM. Causes and Surgical Treatment of Trifacial Neuralgia. *Therap. Gaz.*, July 1911, p. 470.
BRAUN. Über die Lokalanästhesie im Trigeminalggebiet. *Deutsch. med. Wchnschr.*, No. 30, Juli 27, 1911, S. 1353.
- Neuritis.**—HARRINGTON and TEACHER. Case of Peripheral Neuritis of Obscure Origin, with Secondary Changes in the Spinal Cord. *Glasgow Med. Journ.*, Aug. 1911, p. 88.
ARNOLD. Aus der Abteilung für Infektionskrankheiten des allgem. Landesspitals in Lemberg. Über Neuritis optica bei Flecktyphus. *Wien. klin. Wchnschr.*, Nr. 33, Aug. 17, 1911, S. 1190.
PERRERO. Sopra un caso di polineurite gravidica unita a sintomi di ipotiroidismo. *Riv. di Patol. nerv. e ment.*, Vol. xvi., Fasc. 7, Luglio 1911, p. 393.
SARBÓ. Die Symptomatologie der Erkrankungen im Bereiche des zweiten Sakralsegmentes und deren diagnostische Bedeutung. Beiträge zur Symptomatologie und Pathologie der durch Gifte (Blei, Alkohol, Aether, Zink [?]) verursachten Neuritiden des Nervus ischiadicus und der Ischias. *Wien. klin. Wchnschr.*, Nr. 30, Juli 27, 1911, S. 1086.
- Exophthalmic Goitre. Cretinism, etc.**—CECIKAS. Zur Pathogenese der Basedow-Krankheit. *Wien. Med. Wchnschr.*, Nr. 35, Aug. 26, 1911, S. 2195.
BERNARDI. Un caso di cretinismo sporadico. *Ann. di Freniat.*, Vol. xxi., Fasc. i., Marzo 1911, p. 56.
SODERBERGH. Encore un cas de Myxœdème avec symptômes cérébelleux. *Rev. Neurol.*, No. 14, juillet 30, 1911, p. 86.
HAŠKOVEC. Ueber Wirkung des Thyreoidalextraktes. *Wien. klin. Wchnschr.*, Nr. 31, Aug. 3, 1911, S. 1117.
MISSIROLI. La thyroïde chez les animaux à jeun et chez les animaux réalimentés. *Archiv ital. de Biol.*, Tome lv., Fasc. i., juillet 20, 1911, p. 115.
DELORE et ALAMARTINE. La thyroïdite ligneuse (Maladie de Riedel). *Rev. de Chirurgie*, No. 7, juillet 10, 1911, p. 1.
KRECKE. Über die Häufigkeit und die Diagnose der durch Hypersekretion der Schilddrüse bedingten Störungen (Thyreosen). *Munch. Med. Wchnschr.*, No. 30, Juli 25, 1911, S. 1601.
SIMON. Über Röntgenbestrahlungen der Schilddrüse bei Thyreoidismus. *Deutsch. med. Wchnschr.*, No. 29, Juli 20, 1911, S. 1345.
ROSSI. Sur les effets de la thyro-parathyroïdectomie chez les animaux de la race ovine. *Archiv ital. de Biol.*, Tome lv., Fasc. i., juillet 20, 1911, p. 91.
MOREL. L'acidose parathyroprive. *Journ. de Physiol. et de Path. gén.*, Tome 13, No. 4, juillet 15, 1911, p. 542.
M'CARRISON. The Experimental Transmission of Goitre from Man to Animals. *Proc. Roy. Soc.*, Series B, Vol. lxxxiv., 1911, p. 155.
WERELIUS and RYDIN. Goitre among the Insane. A Study based on an Examination of 4184 Patients. *Journ. of Amer. Med. Assoc.*, Vol. lvii., No. 6, Aug. 5, 1911, p. 449.
- Raynaud's Disease.**—LEMMON. A Case of Raynaud's Disease. *Journ. of Amer. Med. Assoc.*, Vol. lvii., No. 4, July 22, 1911, p. 290.
- Tetany.**—MOFFIT. Tetany in Adults. *Journ. of Amer. Med. Assoc.*, Vol. lvii., No. 6, Aug. 5, 1911, p. 452.
FUCHS. Analogien im Krankheitsbilde des Ergotismus und der Tetanie. *Wien. Med. Wchnschr.*, Nr. 30, Juli 22, 1911, S. 1919.
FUCHS. Analogien im Krankheitsbilde des Ergotismus und der Tetanie. *Wien. Med. Wchnschr.*, Nr. 31, Juli 29, 1911, S. 1974.
LUST. Das Peroneusphänomen—ein Beitrag zur Diagnose der Spasmophilie (Tetanie) im Kindesalter. *Munch. Med. Wchnschr.*, No. 82, Aug. 8, 1911, S. 1709.

- Tetanus.**—MILLARD. A Case of Tetanus treated by Sub-dural Injection of Antitoxin—Recovery. *Australasian Med. Gaz.*, Vol. xxx., No. 6, June 20, 1911, p. 326.
- GARDNER. Tetanus treated with Magnesium Sulphate. *Australian Med. Journ.*, Vol. xvi., No. 6, June 20, 1911, p. 265.
- Alcoholism, etc.**—BARNES. Is Alcoholism a Disease? *Med. Rec.*, Aug. 19, 1911, p. 374.
- BUSH. The Regressive Psychosis of Alcoholism. *N.Y. Med. Journ.*, Aug. 19, 1911, p. 372.
- CROTHERS. Hospitals for Inebriates. *N.Y. Med. Journ.*, July 29, 1911, p. 232.

SPECIAL SENSES AND CRANIAL NERVES—

- SAVAGE. The Ocular Conjugate and Fusion Brain Centers. Only two Axes of Ocular Rotations, and only two Planes of Reference. *Journ. Amer. Med. Assoc.*, Vol. lvii., No. 6, Aug. 5, 1911, p. 467.
- GOLDFLAM. Über eine einfache, leicht zu handhabende Methode der Pupillenuntersuchung nebst Beitrag zur Frage der Konvergenzreaktion und Mitteilung einiger wenig bekannter Phänomene am Auge. *Berl. klin. Wchnschr.*, No. 32, Aug. 7, 1911, S. 1468.
- OATMAN. Maculo-cerebral Degeneration (Familial). *Amer. Journ. of Med. Sciences*, Vol. cxlii., No. 2, Aug. 1911, p. 221.
- WILSON. Retinoscopy without Atropine, and some Observations on Ocular Headaches. *Brit. Med. Journ.*, Aug. 5, 1911, p. 258.
- HORAND. Présence dans le tissu conjonctif de l'iris de cellules spéciales à pigment. Influence des rayons ultra-violet sur le développement du pigment de l'iris. *Rev. Neurol.*, No. 15, août 15, 1911, p. 188.
- LOEPER. Le vertige intestinal. *Semaine méd.*, No. 34, août 23, 1911, p. 397.

MISCELLANEOUS SYMPTOMS AND CASES—

- LEMON. Localisation of a Bullet in the Brain. *Archiv of the Roentgen Ray*, No. 133, Aug. 1911, p. 90.
- JUMENTIÉ et LEVY VALENSI. Dilatations variqueuses des veines spinales postérieures. *Rev. Neurol.*, No. 14, juillet 30, 1911, p. 81.
- HUTCHISON. A Clinical Lecture on Insomnia. *Clinical Journ.*, Aug. 9, 1911, p. 273.
- MARTINI. Un caso atipico di paralisi progressiva riscontrato istologicamente. *Riv. di Patol. nerv. e ment.*, Vol. xvi., Fasc. 7, Luglio 1911, p. 407.
- LEDERER und STOTTE. Zur Frage der psychischen Beeinflussung der Herzaktion. *Munch. Med. Wchnschr.*, No. 33, Aug. 15, 1911, S. 1775.
- BÖCKER. Die Erfolge der Sehnenentspannung bei Lähmungs-deformitäten. *Deutsch. med. Wchnschr.*, No. 29, Juli 20, 1911, S. 1348.
- BERNARDI. Un caso di malattia di Korsakow. *Ann. di Freniat.*, Vol. xxi., Fasc. i., Marzo 1911, p. 52.
- BURZIO and SERAFINI. Sulla Resezione dello spinale nella cura dei tics del collo. *Ann. di Freniat.*, Vol. xxi., Fasc. i., Marzo 1911, p. 82.
- JAKOB. Histologia cerebral y psicologia. *Archiv de Psiquiat. y Criminol.*, Ano x., Mayo y Junio de 1911, p. 385.
- MATTIROLLO. Altérations de la motilité et de la sensibilité à topographie radriculaire dans un cas de ramollissement de la substance grise de la moelle. *Rev. Neurol.*, No. 13, juillet 15, 1911, p. 1.
- UGOLOTTI. Sopra un caso di lesione del nucleo lenticolare di sinistra. *Riv. di Patol. nerv. e ment.*, Vol. xvi., Agosto 1911, p. 471.
- PAUL. The Etiology of the Occupation Neuroses and Neuritides. *Journ. Nerv. and Ment. Dis.*, Vol. xxxviii., No. 8, Aug. 1911, p. 449.
- STURSBURG. Über die Häufigkeit der Unfallneurosen. *Neurol. Centralbl.*, Nr. 16, Aug. 16, 1911, S. 908.
- ROTH. Beitrag zur Kenntnis der mit Fieber einhergehenden vasomotorischen Neurosen. *Neurol. Centralbl.*, Nr. 16, Aug. 16, 1911, S. 898.

- FRANCOTTE. La maîtrise de soi. *Journ. de Neurol.*, No. 13, juillet 5, 1911, p. 241.
- LOEPER. La ganglio-radculite zostérienne tuberculeuse. *Prog. Méd.*, No. 30, juillet 29, 1911, p. 365.
- BARBIER and LIAN. Le zona, accident tuberculeux secondaire ou cliniquement primitif. *Prog. Méd.*, No. 30, juillet 29, 1911.
- CLAUDE. Astasie-abasie d'origine psychopathique dans les affections organiques. *Journ. des Prat.*, No. 33, août 19, 1911, p. 520.
- CLAUDE. Sur un cas d'anarthrie. *Journ. des Prat.*, No. 31, août 5, 1911, p. 484.
- GATTI. La paralysie périodique. *Gaz. des Hôp.*, No. 89 août 8, 1911, p. 1327.
- HIRSCH. Zur Kasuistik des Morbus Recklinghausen im Kindesalter. *Prag. Med. Wchnschr.*, Nr. 29, Juli 20, 1911, S. 375.
- PACH. Aus der Unfallsbegutachtungsabteilung der Landes-Arbeiterversicherungskasse in Budapest. Begutachtung der progressiven Paralyse als Unfallsfolge. *Wien. klin. Wchnschr.*, Nr. 32, Aug. 10, 1911, S. 1162.
- CALLIGARIS. L'anestesia a placche. *Riv. ital. di Neuropatol.*, Vol. iv., Fasc. 8, Agosto 1911, p. 337.
- D'ABUNDO. Syndrome restiforme. *Archiv ital. de Biol.*, Tome iv., Fasc. i., juillet 20, 1911, p. 41.
- BENON. L'Asthéno-manie post-apoplectique. *Rev. de Méd.*, No. 7, juillet 10, 1911, p. 550.
- PLESCH. Über die physiologische Pathologie der Bechterew-Strümpellschen Krankheit. *Deutsch. Med. Wchnschr.*, No. 30, Juli 27, 1911, S. 1380.
- MELCHIOR. Zur Chirurgie der Hypophysis cerebri. *Berl. klin. Wchnschr.*, No. 32, Aug 7, 1911, S. 1453.
- PRIBRAM. Zur Theorie der Adrenalinämie bei Nephritis. *Münch. Med. Wchnschr.*, No. 30, Juli 25, 1911, S. 1613.
- SOMMER. Zur Frage der Nosologischen Selbständigkeit der Hypochondrie. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 6, H. 2, Juli 1911, S. 247.

PSYCHIATRY

- G. M. ROBERTSON. The Differentiation of Melancholia, the Depressive Phase of Manic-Depressive Insanity. (Morison Lectures.) *Journ. Ment. Sc.*, Vol. lvii., July 1911, p. 415.
- DEVINE. The Pathogenesis of a Delusion. *Journ. Ment. Sc.*, Vol. lvii., July 1911, p. 458.
- ERSKINE. Asylum Dysentery. *Journ. Ment. Sc.*, Vol. lvii., July 1911, p. 492.
- CHISLETT. Syphilis and Congenital Mental Defect. *Journ. Ment. Sc.*, Vol. lvii., July 1911, p. 499.
- NORMAN. Witchcraft, Demoniocal Possession, and Insanity. *Journ. Ment. Sc.*, Vol. lvii., July 1911, p. 475.
- DIXON. Some Instances of Sudden Death with post-mortem Findings. *Journ. Ment. Sc.*, Vol. lvii., July 1911, p. 486.
- RAW. The Treatment of Puerperal Insanity with Anti-streptococcic Serum. *Journ. Ment. Sc.*, Vol. lvii., July 1911, p. 506.
- MÜNZER. Zur Ätiologie der Puerperalpsychosen. *Neurol. Centralbl.*, Nr. 15, Aug. 1911, S. 851.
- PERETTI. Simulation von Geisteskrankheit. *Med. Klinik*, Nr. 35, Aug. 27, 1911, S. 1337.
- BAHR. The Significance of Fear in Mental Diseases; Report of a Case with Claustrophobia. *Med. Rec.*, July 15, 1911, p. 123.
- PILGRIM. The Care and Treatment of the Insane in the State of New York. *Amer. Journ of Insanity*, Vol. lxxviii., No. 1, July 1911, p. 1.
- BUCKLEY. The Katatonic Symptom-Complex; Report of a Case occurring in a Middle-aged Male. *Amer. Journ of Insanity*, Vol. lxxviii., No. 1, July 1911, p. 33.

- EDITH JONES. Libraries for Patients in Hospitals for the Insane. *Amer. Journ. of Insanity*, Vol. lxxviii., No. 1, July 1911, p. 95.
- GRACE FIELDS. The Effect of Occupation upon the Individual. *Amer. Journ. of Insanity*, Vol. lxxviii., No. 1, July 1911, p. 103.
- MACCARTHY. The Early Diagnosis of General Paralysis. *Dublin Med. Journ.*, Aug. 1, 1911, p. 81.
- MAY. The Laboratory Diagnosis of General Paralysis. *Archiv of Int. Med.*, Vol. viii., No. 2, Aug. 15, 1911, p. 183.
- LAIGNEL-LAVASTINE and BENON. Paralyse générale simulant une démence par lésions circonscrites. (Soc. de Psychiat.) *L'Encéphale*, No. 8, août 10, 1911, p. 167.
- BENON. L'amnésie dans la paralyse générale. *Gaz. des Hôp.*, No. 88, août 5, 1911, p. 1315.
- STANLEY ABBOT. Meyer's Theory of the Psychogenic Origin of Dementia Praecox. A Criticism. *Amer. Journ. of Insanity*, Vol. lxxviii., No. 1, July 1911, p. 15.
- SCHMID. Ergebnisse persönlich erhobener Katamnesen bei geheilten Dementia-praecox-Kranken. Ein Versuch, Formen von akuter Verwirrtheit als Zustandsbild des manisch-depressiven Irreseins von der Katatonie abzutrennen. *Zeitschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 6, H. 2, Juli 1911, S. 125.
- FRANKHAUSER. Über die Unterarten der Dementia praecox an der Hand Ursteinscher Fälle. *Zeitschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 6, H. 2, Juli 1911, S. 263.
- SAIZ. Dementia Praecox u. Paranoia hallucinatoria chronica. *Allg. Zeitschr. f. Psychiat.*, Bd. 68, H. 4, 1911, S. 444.
- HOLLAENDER. Démence précoce infantile. *Archiv internat. de Neurol.*, Vol. ii., 9^e série, août 1911, p. 97.
- KOZOWSKY. Zur Pathologie des Delirium acutum. *Allg. Zeitschr. f. Psychiat.*, Bd. 68, H. 4, 1911, S. 415.
- DAVIDENKOF. Syndrome catatonique nettement amélioré à la suite d'une strumectomie. *L'Encéphale*, No. 8, août 10, 1911, p. 97.
- ROEHRICH. Les états dépressifs. *Rev. méd. d. l. Suisse Romande*, No. 7, juillet 20, 1911, p. 483.
- HEINICKE. Manisch-depressive Psychose und hysterisches Irresein bei ein und derselben Kranken. *Allg. Zeitschr. f. Psychiat.*, Bd. 68, H. 4, 1911, S. 429.
- JORDAN. The Certification of Lunatics. *Birmingham Med. Review*, Aug. 15, 1911, p. 60.
- ALZHEIMER. Ist die Einrichtung einer psychiatrischen Abteilung im Reichsgesundheitsamt erstrebenswert? *Zeitschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 6, H. 2, Juli 1911, S. 242.
- KELLOGG. Automatism in Insanity. *N.Y. Med. Journ.*, July 15, 1911, p. 133.
- BALLET. Sur un cas d'internement d'office motive par un délire apparent de persécution et de grandeur. (Soc. de Psychiat.) *L'Encéphale*, No. 8, août 10, 1911, p. 162.
- BUVAT. Un Cas d'hallucinoze chronique. (Soc. de Psychiat.) *L'Encéphale*, No. 8, août 10, 1911, p. 153.
- DUPRÉ and COLLIN. Psychose hallucinatoire chronique à début purement sensoriel. (Soc. de Psychiat.) *L'Encéphale*, No. 8, août 10, 1911, p. 159.
- DELMAS. Un cas de nymphomanie grave chez une fillette de dix ans. (Soc. de Psychiat.) *L'Encéphale*, No. 8, août 10, 1911, p. 165.
- RODIET. De l'extension de la colonisation familiale des aliénés. *Archiv internat. de Neurol.*, Vol. ii., 9^e série, août 1911, p. 69.
- MAC-AULIFFE et ARONE. Les applications de la morphologie humaine à la sociologie et à la médecine. (Suite et fin.) *Archiv. internat. de Neurol.*, Vol. ii., 9^e série, août 1911, p. 85.
- KLINGE. Ausbreitung und Zusammenschluss der Hilfsvereine. *Allg. Zeitschr. f. Psychiat.*, Bd. 68, H. 4, 1911, S. 501.
- WILLIMANN. L'histoire de Joseph Heuer. (Suite et fin.) *Archiv internat. de Neurol.*, Vol. ii., 9^e série, août 1911, p. 115.
- SÉRIEUX and LIBERT. La Bastille et ses prisonniers. Contribution à l'étude des asiles de sûreté. (Suite.) *L'Encéphale*, No. 8, août 10, 1911, p. 112.

TREATMENT *

- PATSCHKE. Die Behandlung der Arteriosklerose des Zentralnervensystems mit Tiodine. *Deutsch. Med. Wchnschr.*, No. 33, Aug. 17, 1911, S. 1513.
- PIO. La Terapia bromica per via ipodermica. *Ann. di Freniat.*, Vol. xxi., Fasc. i., Marzo 1911, p. 15.
- WINGFIELD. Four Cases Illustrative of Certain Points in Psycho-Analysis. *Brit. Med. Journ.*, Aug. 5, 1911, p. 256.
- RÖMER. Die Heilungsaussichten der Psychoneurosen. *Münch. Med. Wchnschr.*, No. 30, Juli 25, 1911, S. 1614.
- SEIFERT. Beitrag zur Behandlung der Aphonie (Dysphonia spastica). *Berl. klin. Wchnschr.*, No. 35, Aug. 28, 1911, S. 1589.
- DANNEHL. Selbstbehandlung der Ischias. *Med. Klinik*, Nr. 31, Juli 30, 1911, S. 1203.
- LORENZ. On the Treatment of Spastic Paralysis. *Therap. Gaz.*, July 1911, p. 457.
- ALBRECHT. Zur operativen Heufieberbehandlung durch doppelseitige Resektion des N. ethmoidalis anterior. *Deutsch. Med. Wchnschr.*, No. 30, Juli 27, 1911, S. 1395.
- BAB. Die Behandlung der Osteomalacie mit Hypophysenextrakt. *Münch. Med. Wchnschr.*, No. 34, Aug. 22, 1911, S. 1814.
- STERN. Wehenverstärkung und Wehenerregung durch Pituitrin. *Berl. klin. Wchnschr.*, No. 32, Aug. 7, 1911, S. 1459.
- BONDY. Pituitrin in der geburtshilflichen Praxis. *Berl. klin. Wchnschr.*, No. 32, Aug. 7, 1911, S. 1461.

* A number of references to papers on Treatment are included in the Bibliography under individual diseases.

Bibliography

ANATOMY

- HWOROSTUCHIN. Zur Frage über den Bau des Plexus chorioideus. *Arch. f. Mikr. Anat.*, Bd. 77, H. 3, 1911, S. 232.
- MÜHLMANN. Studien über den Bau und das Wachstum der Nervenzellen. *Arch. f. Mikr. Anat.*, Bd. 77, H. 3, 1911, S. 194.
- NAGEOTTE. Betrachtungen über den tatsächlichen Bau und die künstlich hervorgerufenen Deformationen der markhaltigen Nervenfaser. *Arch. f. Mikr. Anat.*, Bd. 77, H. 3, 1911, S. 245.
- GIANNULI. Sull' anatomia delle Radiazioni Rolandiche. *Riv. Speriment. di Freniat.*, 1911, Vol. xxxvii., p. 581.
- SHIMADA. Über die Wirbelsäule und die Hüllen des Rückenmarks von *Cryptobranchus japonicus*. *Anat. Hefte Beitrag u. Refer. Anat. u. Entwickl.*, Bd. 44, H. 1, 1911, p. 1.
- HITCHCOCK. The Pituitary Body. *Med. Rec.*, Sept. 2, 1911, p. 459.
- MAYO. Lingual, Sub-lingual, and Other Forms of Aberrant Thyroids. *Journ. Amer. Med. Ass.*, Vol. lviii., No. 10, Sept. 2, 1911, p. 784.
- HANSON. Über die Entwicklung der Parathyreoidea accessoriae und der Thymus beim Kannichen. *Anat. Anzeig.*, Bd. xxxix., Nos. 21 and 22, Aug. 31, 1911, p. 545.
- BOBEAU. Recherches cytologiques sur les glandules parathyroïdes du cheval. *Journ. de l'Anat. et de Physiol.*, No. 4, juillet-août 1911, p. 371.
- RUBEN. Zur Embryologie der Thymus und der Parathyreoidea beim Meer-schweinchen. *Anat. Anzeig.*, Bd. xxxix., Nos. 21 and 22, Aug. 31, 1911, p. 571.

PHYSIOLOGY

- FRANZ. On the Functions of the Cerebrum: Concerning the Lateral Portions of the Occipital Lobes. *Amer. Journ. of Physiol.*, Vol. xxviii., No. 6, Sept. 1, 1911, p. 308.
- FELICIANELLI. Contribution à la connaissance de la fonction du lobe frontal du cerveau du chien. *Archiv. ital. de Biol.*, Tome lv., Fasc. 2, 1911, p. 257.
- RONCORONI. Le funzioni dei lobi prefrontali in rapporto ai dati architettonici. *Riv. di Patol. nerv. e ment.*, Vol. xvi., Fasc. 9, Settembre 1911, p. 521.
- PAL. Über die Wirkung des Cholin und des Neurin. Ein Beitrag zur Kenntnis der Gefäßgifte. *Ztschr. f. exp. Path. u. Therap.*, Bd. ix., H. 2, 1911, S. 191.
- KAUFFMANN. Über den Befund von Cholin im Ochsengehirn. *Ztschr. f. Physiol. Chem.*, Bd. 74, H. 2, 1911, S. 175.
- COUVREUR and SARVONAT. Action de l'oxalate de sodium sur le système neuro-musculaire. *Journ. de Physiol. et de Path. gén.*, No. 5, Sept 15, 1911, p. 709.
- CHIARI and FRÖHLICH. Zur Frage der Nervenregbarkeit bei der Oxalatvergiftung. *Archiv. f. exp. path. u. pharm.*, Bd. 66, H. 1-2, 1911, S. 110.
- HARTUNG. Die Wirkung des kristallisierten Aconitin auf den motorischen Nerv und auf den skelettmuskel des Kaltblüters. *Archiv. f. exp. path. u. pharm.*, Bd. 66, H. 1-2, 1911, S. 58.
- KNOWLTON. Observations on the Effects of Stimulation of the Eighth and Ninth Nerve Roots upon the Bladder of the Toad. *Journ. of Physiol.*, Vol. xliii., No. 1, Sept. 11, 1911, p. 91.
- LUCAS. On the Transference of the Propagated Disturbance from Nerve to Muscle, with special reference to the apparent Inhibition described by Wedensky. *Journ. of Physiol.*, Vol. xliii., No. 1, Sept. 11, 1911, p. 46.
- ELLISON. The Relation between the Physical, Chemical, and Electrical Properties of the Nerves. Part. V. The Action of Chinconamine Hydrochloride on Frog's Nerve. *Journ. of Physiol.*, Vol. xliii., No. 1, Sept. 11, 1911, p. 28.

- AIRILA and LOIMARANTA. Zur Kenntnis der durch die zentripetalen Muskelnerven hervorgerufenen Reflexe an den hinteren Extremitäten des Kaninchens. *Skand. Arch. f. Physiol.*, Bd. xxv., H. 4-5, 1911, S. 259.
- RÉTHL. Zur Kenntnis der motorischen Innervation des weichen Gaumens. *Wien. Med. Wochenschr.*, Nr. 39, Sept. 23, 1911, S. 2522.
- ROBINSON and DRAPER. Studies with the Electrocardiograph on the Action of the Vagus Nerve on the Human Heart. I. The Effect of Mechanical Stimulation of the Vagus Nerve. *Journ. of Exp. Med.*, Vol. xiv., No. 3, Sept. 1, 1911, p. 217.
- MEEK. Regeneration of Auerbach's Plexus in the Small Intestine. *Amer. Journ. of Physiol.*, Vol. xxviii., No. 6, Sept. 1, 1911, p. 352.
- SEIDELL. Further Experiments upon the determination of Iodine in Thyroid. *Journ. of Biol. Chem.*, Vol. x., No. 2, Oct. 1911, p. 108.
- REID HUNT. Experiments on the Relation of the Thyroid to Diet. *Journ. Amer. Med. Ass.*, Vol. lvii., No. 13, Sept. 23, 1911, p. 1532.

PSYCHOLOGY

- PETERS. Gefühl und Erinnerung. *Psychol. Arbeit.*, Bd. vi., H. 2, 1911, S. 197.
- MAJOR. Die Ideenassoziation der angeborenen Defektpsychosen. *Prag. Med. Wochenschr.*, Nr. 38, Sept. 21, 1911, S. 491.
- STUMPF. Differenzton und Konsonanz (zweiter artikel). *Ztschr. f. Psychol. u. Physiol. d. Sinnesorg.*, Bd. 59, H. 3, 1911, S. 161.
- DAUBER. Über bevorzugte Assoziationen und verwandte Phänomene. *Ztschr. f. Psychol. u. Physiol. d. Sinnesorg.*, Bd. 59, H. 3, 1911, S. 176.
- MAJOR. Fürsorgeerziehung und Heilpädagogik. *Ztschr. f. Psychother. u. Med. Psychol.*, Bd. 3, H. 4, 1911, S. 193.
- GÄDEKEN. Über die psycho-physiologische Bedeutung der atmosphärischen Verhältnisse, insbesondere des Lichts. *Ztschr. f. Psychother. u. Med. Psychol.*, Bd. 21, H. 1-3, 1911, S. 206.
- HÄCKER. Systematische Traumbeobachtungen mit besonderer Berücksichtigung der Gedanken. *Archiv. f. d. ges. Psychol.*, Bd. 21, H. 1-3, 1911, S. 1.
- PAULI. Über die Beurteilung der Zeitordnung von optischen Reizen im Anschluss an eine von E. Mach beobachtete Farbenerscheinung. *Arch. f. d. ges. Psychol.*, Bd. 21, H. 1-3, 1911, S. 132.
- WESTPHAL. Über Haupt- und Nebenaufgaben bei Reaktionsversuchen. *Archiv. f. d. ges. Psychol.*, Bd. 21, H. 1-3, 1911, S. 219.
- LESCHKE. Die körperlichen Begleiterscheinungen seelischer Vorgänge. *Archiv. f. d. ges. Psychol.*, Bd. 21, H. 1-3, 1911, S. 435.
- VARENDONCK. Les Témoignages d'Enfants dans un procès retentissant. *Archiv. de Psychol.*, Tome xi., No. 42, juillet 1911, p. 129.
- CRAMAUSSEL. Le Sommeil d'un Petit Enfant (avec graphiques). *Archiv. de Psychol.*, Tome xi., No. 42, juillet 1911, p. 172.
- CHOJECKI. Contribution à l'Etude de la suggestibilité. *Archiv. de Psychol.*, Tome xi., No. 42, juillet 1911, p. 182.
- FREUD. Formulierungen über die zwei Prinzipien des psychischen Geschehens. *Jahrbuch f. Psychoanalyt. u. Psycho-path. Forsch.*, Bd. 3, H. 1, 1911, S. 1.
- BERTSCHINGER. Illustrierte Halluzinationen. *Jahrbuch f. Psychoanalyt. u. Psycho-path. Forsch.*, Bd. 3, H. 1, 1911, S. 69.
- JÜNG. Wandlungen und Symbole der Libido. *Jahrbuch f. Psychoanalyt. u. Psycho-path. Forsch.*, Bd. 3, H. 1, 1911, S. 120.
- JÜNG. Morton Prince, M.D., The Mechanism and Interpretation of Dreams. *Jahrbuch f. Psychoanalyt. u. Psycho-path. Forsch.*, Bd. 3, H. 1, 1911, S. 309.
- RANK. Ein Beitrag zum Narcissismus. *Jahrbuch f. Psychoanalyt. u. Psycho-path. Forsch.*, Bd. 3, H. 1, 1911, S. 401.
- PFISTER. Die psychologische Enträtselung der religiösen Glossolalie und der automatischen Kryptographie. *Jahrbuch f. Psychoanalyt. u. Psycho-path. Forsch.*, Bd. 3, H. 1, 1911, S. 427.
- BLEULER. Eine Kasuistische Mitteilung zur kindlichen Theorie der Sexualvorgänge. *Jahrbuch f. Psychoanalyt. u. Psycho-path. Forsch.*, Bd. 3, H. 1, 1911, S. 467.
- JÜNG. Kritik über E. Bleuler: Zur Theorie des schizophrenen Negativismus. *Jahrbuch f. Psychoanalyt. u. Psycho-path. Forsch.*, Bd. 3, H. 1, 1911, S. 469.
- BLEULER. Antwort auf die Bemerkungen Jungs zur Theorie des Negativismus. *Jahrbuch f. Psychoanalyt. u. Psycho-path. Forsch.*, Bd. 3, H. 1, 1911, S. 475.
- BERZE. Bewusstseinstonus. *Wien. Med. Wochenschr.*, Nr. 40, Sept. 30, 1911, S. 2603.

RIEFFERT. Bericht über den IV. internationalen Kongress für Philosophie zu Bologna vom 6-11 April 1911 insbesondere die psychologische Sektion. *Archiv. f. d. ges. Psychol.*, Bd. 21, H. 1-3, 1911, S. 464.

PATHOLOGY

ARCHAMBAULT. A Contribution to the Anatomy and Pathogeny of Agenesis of the Corpus Callosum. *Albany Med. Annals*, Sept. 1911, p. 513.

STRANSKY and LÖWY. Zur pathologischen Histologie der Hirn- und Meningealvenen. *Wien. Med. Wchnschr.*, Nr. 40, Sept. 30, 1911, S. 2599.

MACDONALD. Fat Removal in Peripheral Nerve after Section. *Journ. of Path. and Bacteriol.*, Vol. xvi., July 1911, p. 71.

STURSBURG. Ein Beitrag zur Kenntnis der Cerebrospinalflüssigkeit. *D. Ztschr. f. Nervenheilk.*, Bd. 42, H. 3-4, 1911, S. 325.

GEISSLER. Eine objektive Methode zur Bestimmung pathologischer Zellvermehrung im Liquor cerebrospinalis. *Münch. Med. Wchnschr.*, Nr. 36, Sept. 5, 1911, S. 1917.

HAUPTMANN. Die Vorteile der Verwendung grösserer Liquormengen ("Auswertungsmethode") bei der Wassermannschen Reaktion für die neurologische Diagnostik. *D. Ztschr. f. Nervenheilk.*, Bd. 42, H. 3-4, 1911, S. 240.

MEIER. Die technischen und klinischen Grundzüge der Wassermann-Reaktion. *Folia Serologica*, Bd. 7, H. 8, 1911, S. 783.

RODDY. A Résumé of One Hundred Wassermann Tests. *N.Y. Med. Journ.*, Sept. 23, 1911, p. 634.

DEMBOWSKI. Beitrag zur Kenntnis des Ausfalls der Wassermannschen Reaktion im Lumbalpunktat und Blutserum bei Erkrankungen des Nervensystems unter Berücksichtigung verschiedener Antigene. *Deutsch. Med. Wchnschr.*, Nr. 36, Sept. 7, 1911, S. 1651.

EUZIERE, MESTREZAT and ROGER. La réaction du liquide céphalo-rachidien à l'acide butyrique (réaction de Noguchi). Sa valeur dans le diagnostic des syphilis du névraxe. *L'Encéphale*, No. 9, sept. 10, 1911, p. 214.

CITRON. Zur Pathologie der psychophysiologischen Blutverschiebung. *Deutsch. Med. Wchnschr.*, Nr. 39, Sept. 28, 1911, S. 1781.

JOEST. Untersuchungen über die pathologische Histologie, Pathogenese und postmortale Diagnose der seuchenhaften Gehirn-Rückenmarkentzündung (Bornaschen Krankheit) des Pferdes. Ein Beitrag zur vergleichenden Pathologie des Zentralnervensystems. *D. Ztschr. f. Nervenheilk.*, Bd. 42, H. 3-4, 1911, S. 293.

NEUBURGER. Aus der Vergangenheit der deutschen Neuropathologie. *Wien. Med. Wchnschr.*, Nr. 40, Sept. 30, 1911, S. 2569.

CLINICAL NEUROLOGY

GENERAL—

ESHNER. The Elicitation of the Knee Jerk. *Journ. Amer. Med. Assoc.*, Vol. lvii., No. 10, Sept. 2, 1911, p. 793.

TROMNER. Über Modifikationen des Babinski- und Oppenheim-Reflexes und ein neues Fussphänomen (Wadenphänomen). *Deutsch. Med. Wchnschr.*, Nr. 37, Sept. 14, 1911, S. 1700.

CURSCHMANN. Über die diagnostische Bedeutung des Babinskischen Phänomens im präurämischen Zustand. *Münch. Med. Wchnschr.*, No. 39, Sept. 26, 1911, S. 2054.

FRANKL-HOCHWART. Notiz zur Kenntnis der cerebralen Blasenstörungen. *Wien. Med. Wchnschr.*, Nr. 40, Sept. 30, 1911, S. 2586.

NONNE. Der heutige Standpunkt der Lehre von der Bedeutung der "vier Reaktionen" für die Diagnose und Differentialdiagnose organischer Nervenkrankheiten. *D. Ztschr. f. Nervenheilk.*, Bd. 42, H. 3-4, 1911, S. 202.

MINOR. Ein neuer Thermoästhesiometer mit Mischvorrichtung. *Neurol. Centralbl.*, Nr. 18, Sept. 16, 1911, S. 1037.

GIOVANETTI. Etude sur le moine florentin Jérôme Savonarole. *Archiv. internat. de Neurol.*, Vol. ii., 9^e série, sept. 1911, p. 153.

NERVES—

HOGUET. The Nerve Supply of the Anterior Abdominal Wall and its Surgical Importance. *Annals of Surg.*, Part 224, Aug. 1911, p. 153.

DUROUX. Greffes et anastomoses nerveuses. *Lyon méd.*, No. 40, oct. 1, 1911, p. 665.

SPINAL CORD—

General.—SPILLER. Epidural Ascending Spinal Paralysis. *Rev. Neurol. and Psychiat.*, Vol. ix., Sept. 1911, p. 494.

MATTIROLO. Quelques considérations sur les altérations pathologiques des réflexes dans les lésions traumatiques de la moelle. *Rev. de méd.*, No. 8, août 10, 1911, p. 651.

TEDESCHI. Zur Frage der "spastischen Rückenmarkslähmung." *Neurol. Centralbl.*, Nr. 18, Sept. 16, 1911, S. 1033.

SIBELIUS. Rückenmarksanomalien bei Paralytikern. Ein Beitrag zur Lehre von den inneren Degenerationszeichen. *Beitrag z. path. anat. u. z. allg. path.*, Bd. li., H. 2, 1911, S. 318.

ASTWAZATUROW. Ein Fall von posttraumatischer spinaler Amyotrophie nebst Bemerkungen über sogen. Poliomyelitis anterior chronica. *D. Ztschr. f. Nervenheilk.*, Bd. 42, H. 3-4, 1911, S. 353.

BAUER. Zur Kenntnis der "Neuropathischen Disposition" des Rückenmarkes. *Wien. Med. Wchnschr.*, Nr. 40, Sept. 30, 1911, S. 2610.

Fracture, Dislocation, etc.—JONAS. Spinal Fractures. Opinions Based on Observations of Sixteen Operations. *Journ. Amer. Med. Ass.*, Vol. lviii., No. 11, Sept. 9, 1911, p. 859.

THOMPSON. An Occipital Atlas and Atlo-axis Dislocation. *N.Y. Med. Journ.*, Sept. 23, 1911, p. 640.

ALLEN. Surgery of Experimental Lesion of Spinal Cord equivalent to Crush Injury of Fracture. Dislocation of Spinal Column. A Preliminary Report. *Journ. Amer. Med. Ass.*, Vol. lviii., No. 11, Sept. 9, 1911, p. 878.

J. and A. BOECKEL. Des fractures du Rachis cervical sans symptômes médullaires. (Suite et fin.) *Rev. de Chirurgie*, No. 8, août 10, 1911, p. 285.

BRUNS. Ein Fall von arachnoidaler Zystenbildung (Bindegewebszysten) mit Kompression des Rückenmarks. Operation. Heilung. *Neurol. Centralbl.*, Nr. 18, Sept. 16, 1911, p. 1026.

CALLAGHAN. A Case of Syphilitic Necrosis of the Cervical Vertebrae. *Lancet*, Sept. 23, 1911, p. 883.

TIMBERG. An Address on Spinal Curvatures and their Treatment by Physical Exercises. *Lancet*, Sept. 2, 1911, p. 667.

LOVEIT and SEVER. The Treatment of Lateral Curvature of the Spine. *Journ. Amer. Med. Ass.*, Vol. lvii., No. 10, Sept. 2, 1911, p. 786.

Brown-Séquard Symptom-Complex.—LEFAS. Sur un Cas de Syndrome de Brown-Séquard. *Rev. Neurol.*, No. 18, sept. 30, 1911, p. 370.

BABINSKI, JARKOWSKI and JUMENTIÉ. Syndrome de Brown-Séquard par Coup de Couteau. *Rev. Neurol.*, Nr. 17, sept. 15, 1911, p. 309.

Myelitis.—RICCA. Mielite degenerativa acuta sifilitica. *Riv. Ital. di Neuropatol.*, Vol. iv., Fasc. 9, Sett. 1911, p. 393.

Herpes Zoster.—KROTOSZYNER. Herpes Zoster in connection with Kidney Lesions. *Journ. Amer. Med. Ass.*, Vol. lviii., No. 11, Sept. 9, 1911, p. 900.

WILLIAMS. A Case of Extensive Herpes. *Med. Rec.*, Sept. 2, 1911, p. 478.

Tabes Dorsalis.—WILLIAMS. On the Clinical Diagnosis of Early Tabes Dorsalis with Negative Wassermann Reactions. *Med. Press*, No. 3773, Aug. 30, 1911, p. 223.

MATTHEWS. The Differential Diagnosis of Tabes. *Practitioner*, Sept. 1911, p. 392.

DUDGEON. A Diphtheria-like Bacillus causing Cellulitis in the Region of a Spontaneous Fracture in a Case of Tabes Dorsalis. *Journ. of Hygiene*, Vol. ii., No. 2, July 1911, p. 137.

KÖNIG. Über die Möglichkeit der Beeinflussung gastrischer Krisen durch Leitungsanästhesie. *Med. Klinik*, Nr. 39, Sept. 24, 1911, p. 1495.

ZINN. Förster'sche Operation wegen gastrischer Krisen bei Tabes. *Berl. klin. Wchnschr.*, No. 37, Sept. 11, 1911, S. 1679.

WILMS and KOLL. Modifikation der Försterschen Operation, Resektion der Wurzeln am Conus medullaris. *Münch. Med. Wchnschr.*, Nr. 37, Sept. 12, 1911, S. 1961.

Poliomyelitis Anterior Acuta.—HINDS HOWELL and PARSONS-SMITH. A Case of Acute Poliomyelitis in an Adult. *Lancet*, Sept. 16, 1911, p. 812.

HERNAMAN-JOHNSON. A Case of Wry-neck following Infantile Paralysis; Treatment; Result. *Brit. Med. Journ.*, Sept. 23, 1911, p. 651.

- FLEXNER. The Control of Epidemic Poliomyelitis. *Amer. Journ. of Dis. of Child.*, Vol. ii., Aug. 1911, pp. 96-101.
- HODGETTS. The Statistics of Infantile Paralysis. *Pediatrics*, Vol. xxiii., No. 9, Sept. 1911, p. 521.
- MARKS. Infection of Rabbits with the Virus of Poliomyelitis. *Journ. of Exp. Med.*, Vol. xiv., No. 2, 1911.
- NEUSTAEDTER and THRO. Experimental Poliomyelitis. *N.Y. Med. Journ.*, Sept. 23, 1911, p. 613.
- MARSH. Epidemic Anterior Poliomyelitis: with a Review of Recent Investigations into the Experimental Disease in Monkeys. *Liverpool Med.-Chirurg. Journ.*, No. 60, July 1911, p. 311.

BRAIN—

- Skull, Injury, etc.**—SCHÜLLER. Zur Röntgen-Diagnose der basalen Impression des Schädels. *Wien. Med. Wchnschr.*, Nr. 40, Sept. 30, 1911, S. 2594.
- Meningitis.**—MAAS. Über eine besondere Form der Encephalopathia saturnina (Meningitis serosa). *Monatschr. f. Psychiat. u. Neurol.*, Bd. xxx., 1911, S. 207.
- BOUCHE. Quatre cas de méningite cérébro-spinale épidémique. *Journ. de Neurol.*, No. 16, août 20, 1911, p. 301.
- COLLIGNON and PILOD. La précipito-réaction dans la méningite cérébro-spinale. La valeur diagnostique. *Presse méd.*, No. 73, sept. 13, 1911, p. 732.
- RAVANT. Etude biopsique de la méningo-vascularite syphilitique. *Presse méd.*, No. 77, sept. 27, 1911, p. 761.
- FREIMAN. A Curious Case of Tuberculous Meningitis. *N.Y. Med. Journ.*, Sept. 9, 1911, p. 531.
- KING. Note on a Case of Tuberculous Meningitis; with a Remarkable Antemortem Rise of Temperature. *Med. Rec.*, Aug. 26, 1911, p. 427.
- MAYERHOFER and NEUBAUER. Über Meningitis tuberculosa und Meningitis serosa. Ergebnisse der Permanganattitration des Liquor cerebrospinalis. *Ztschr. f. Kinderheilk.*, Bd. iii., H. 2, 1911, p. 155.
- TISSOT. La Pachyméningite cérébrale hypertrophique. *Prog. méd.*, No. 35, Sept. 2, 1911, p. 421.
- RIMINI. Über einen Fall von otogener Pachymeningitis interna purulenta. *Ztschr. f. Ohrenheilk., etc.*, Bd. lxxiii., H. 3, 1911, S. 210.
- PRINCE. Traumatisme remontant à huit ans suivi de méningite. Troubles mentaux. Deux craniectomies. Guérison. *Rev. Neurol.*, No. 18, sept. 30, 1911, p. 365.
- PARRY. A Case of Erysipelas complicated with Meningitis following an Intranasal Operation; Recovery. *Lancet*, Sept. 30, 1911, p. 944.
- Encephalitis.**—KATZENSTEIN. Über Venenthrombose und hämorrhagische Enzephalitis im Anschluss an bakteriologisch-anatomische Untersuchungen bei Sinusthrombosen (Komplikation mit Chlorose, Eklampsie). *Münch. Med. Wchnschr.*, No. 35, Aug. 29, 1911, S. 1853.
- Abscess.**—GRÜNBERG. Tiefliegender Knochenabszess an der hinteren Felsenbeinfläche mit Durchbruch in das Labyrinth. Tod an Meningitis nach Sturz vom Pferde. *Ztschr. f. Ohrenheilk., etc.*, Bd. lxxiii., H. 3, 1911, S. 217.
- Embolism.**—HIGIER. Zur Diagnose der Hirnembolie. *Neurol. Centralbl.*, Nr. 17, Sept. 1, 1911, S. 975.
- Tumours.**—MANLEY. A Case of Brain Tumour. *Journ. Amer. Med. Assoc.*, Vol. lvii., No. 13, Sept. 23, 1911, p. 1042.
- MARBURG. Irreführende Lokalsymptome bei Hirntumoren. *Wien. Med. Wchnschr.*, Nr. 40, Sept. 30, 1911, S. 2590.
- BABONNEIX. Gliomes et traumatismes cérébraux. *Gaz. des Hôp.*, No. 100, Sept. 5, 1911, p. 1459.
- BRAV. A Case of Mixed Astigmatism presenting Symptoms of Brain Tumour. *N.Y. Med. Journ.*, Aug. 26, 1911, p. 429.
- TODDE. Contributo allo studio della patogenesi della cachessia immediata da lesione cerebrali. *Riv. Speriment. di Freniat.*, 1911, Vol. xxxvii., p. 651.
- GORRIERI. Di un caso di deviazione coniugata degli occhi e del capo da emianopsia. *Riv. Ital. di Neuropatol.*, Vol. iv., Fasc. 9, Sett. 1911, p. 335.
- AYTOUN. Notes on the Clinical Appearances in Two Cases of Cerebral Disease, one being grave organic disease and the other purely functional. *Lancet*, Sept. 16, 1911, p. 825.

- KENNEDY. Retrobulbar Neuritis as an Exact Diagnostic Sign of Certain Tumours and Abscesses in the Frontal Lobes. *Amer. Journ. of Med. Sciences*, Vol. cxlii., No. 3, Sept. 1911, p. 355.
- BOUCHAUD. Othématome et tumeurs séro-albumineuses du pavillon de l'oreille. *Journ. de Neur.*, No. 15, août 5, 1911, p. 281.
- Pituitary Tumours.**—V. BOTWINNIK, GIESE and HESSE. Zur Kenntnis der Hypophysengeschwülste. *St Petersburg. Med. Wchnschr.*, No. 34, Aug. 1911, S. 369.
- ROUSSY and CLUNET. Les tumeurs du lobe antérieur de l'hypophyse, essai de classification histologique (projection de microphotographies en couleurs). *Rev. Neurol.*, No. 17, Sept. 15, 1911, p. 313.
- Aphasia.**—HAGELSTAM. Motorische Aphasie infolge eines embolischen Erweichungsherdes in der vorderen Sprachregion (in der dritten linken Frontalwindung). *Beiträg z. path. anat. u. z. allg. path.*, Bd. 51, H. 2, 1911, S. 296.
- Hemiplegia.**—BABINSKI. Hémiplegie et craniectomie. *Journ. des prat.*, No. 37, sept. 16, 1911, p. 582.
- Cerebellum.**—FABRITIUS. Ein Fall von cystischem Kleinhirntumor. *Beiträg z. path. anat. u. z. allg. path.*, Bd. 51, H. 2, 1911, S. 311.
- IORE. La sintomatologia del tumore cerebellare nei bambini. *Riv. Speriment. di Freniat.*, 1911, Vol. xxxvii., p. 665.
- Microcephaly.**—WIGLESWORTH. A Case of Microcephaly. *Liverpool Med.-Chirurg. Journ.*, No. 60, July 1911, p. 325.
- Syphilis.**—KOLLE and STINER. Die Verwendung von Azeton-Extrakten zur Serumdiagnostik der Syphilis. *Deutsch. Med. Wchnschr.*, No. 38, Sept. 21, 1911, S. 1739.
- GAUCHER. L'hérédosyphilis tertiaire du système nerveux. *Prog. méd.*, No. 38, sept. 23, 1911, p. 459.
- GURD and WADE. A Study of Primary Intimal Arteritis of Syphilitic Origin. *Journ. Med. Research*, Sept. 1911, p. 85.
- STRONG. Precipitation Tests for Syphilis. *Journ. Med. Research*, Sept. 1911, p. 199.
- Salvarsan.**—BROWNING and M'KENZIE. The Treatment of Syphilis by Salvarsan. *Brit. Med. Journ.*, Sept. 23, 1911, p. 654.
- CUNNINGHAM. A Report of Sixty Cases of Syphilis treated with Salvarsan ("606"). *Boston Med. and Surg. Journ.*, Vol. cxlv., No. 8, Aug. 24, 1911, p. 287.
- WOLBARST. A Study of Fifty Cases of Syphilis treated with Salvarsan, with Special Reference to the Clinical Result and the Wassermann Reaction. *N. Y. Med. Journ.*, Sept. 16, 1911, p. 561.
- WOLBARST. A Study of Fifty Cases of Syphilis treated with Salvarsan, with Special Reference to the Clinical Result and the Wassermann Reaction. *N. Y. Med. Rec.*, Sept. 23, 1911, p. 615.
- FABRY and KRETZMER. Zur Behandlung der tertiären Syphilis mit Salvarsan. *Med. Klinik*, Nr. 37, Sept. 10, 1911, p. 1420.
- ASSMANN. Erfahrungen über Salvarsanbehandlungluetischer und metaluetischer Erkrankungen des Nervensystems unter Kontrolle durch die Lumbalpunktion. *Deutsch. Med. Wchnschr.*, Nr. 35, Aug. 31, 1911, S. 1603.
- ASSMANN. Erfahrungen über Salvarsanbehandlungluetischer und metaluetischer Erkrankungen des Nervensystems unter Kontrolle durch die Lumbalpunktion (Schluss aus Nr. 35). *Deut. Med. Wchnschr.*, Nr. 36, Sept. 7, 1911, S. 1648.
- BREITMANN. Über die syphilitischen Herzerkrankungen als Indikation und Kontraindikation für die Salvarsanbehandlung. *Berl. klin. Wchnschr.*, No. 39, Sept. 25, 1911, S. 1763.
- LEVEN. Bemerkung zu der Arbeit "Weitere Erfahrungen mit Salvarsan" von Prof. Dr Erich Hoffmann und Dr Josef Jaffé in Nr. 29 dieser Wochenschrift. *Deutsch. Med. Wchnschr.*, Nr. 35, Aug. 31, 1911, S. 1607.
- GRUNBAUM. A Clinical Lecture on a Physician's Experience of "Salvarsan." *Clin. Journ.*, Aug. 30, 1911, p. 321.
- JOANNIDÉS. Weitere Erfahrungen mit der Intramuskulären und intravenösen Salvarsaninjektion. *Deut. Med. Wchnschr.*, Nr. 39, Sept. 28, 1911, S. 1797.
- SCHIELE. Beobachtungen über die Wirkung des "606" resp. Salvarsan bei Syphilis. *St Petersburg. Med. Wchnschr.*, No. 33, Aug. 1911, S. 359.
- SIMON. Zur ambulanten Behandlung der Syphilis mit kleinen Salvarsandosin. *Berl. klin. Wchnschr.*, No. 39, Sept. 25, 1911, S. 1770.
- TUCKER. Acute Nephritis following the Intravenous Injection of Salvarsan. *Therap. Gaz.*, No. 9, Sept. 15, 1911, p. 627.

- WEBER. A Fatal Result with Salvarsan. *Med. Press*, No. 3773, Aug. 30, 1911, p. 221.
- MARSCHALKÓ. Ein Fall schwerer Intoxikation (Arsen?) im Anschluss an eine intravenöse Salvarsaninjektion nebst weiteren Bemerkungen über die Entgiftung dieser letzteren. *Deut. Med. Wchnschr.*, Nr. 37, Sept. 14, 1911, S. 1702.
- FRÜHWALD. Über medikamentöse Spätexantheme nach intravenösen Salvarsaninjektionen. *Münch. Med. Wchnschr.*, No. 40, Okt. 3, 1911, S. 2109.
- GALEWSKY. Über Nebenwirkungen bei intravenösen Salvarsaninjektionen, bedingt durch Kochsalzlösung. *Deut. Med. Wchnschr.*, Nr. 38, Sept. 21, 1911, S. 1743.
- STUMPKE. Ist das Auftreten von spezifisch luetischen Erscheinungen beim Säugling nach Stillen mit Salvarsanmilch als Endotoxinwirkung aufzufassen. *Berl. klin. Wchnschr.*, No. 38, Sept. 18, 1911, S. 1722.
- MAYER. Technische Feinheiten bei der Salvarsaninfusion. *Berl. klin. Wchnschr.*, No. 37, Sept. 11, 1911, S. 1687.
- LEREDDE. Technique des injections intraveineuses d'arsénobenzol. *Presse méd.*, No. 74, Sept. 16, 1911, p. 739.
- DAWSON. A Simple Apparatus for the Intravenous (or Muscular) Injection of Salvarsan. *Lancet*, Sept. 30, 1911, p. 954.
- TROMNER and DELBANCO. Über Neurorezidive nach Salvarsan, speziell Polyneuritis. *Münch. Med. Wchnschr.*, No. 35, Aug. 29, 1911, S. 1863.
- TROMNER and DELBANCO. Über Neurorezidive nach Salvarsan, speziell Polyneuritis. (Schluss.) *Münch. Med. Wchnschr.*, No. 36, Sept. 5, 1911, S. 1920.
- DESNEUX and DUJARDIN. Über Abweichungen im Verlaufe der Syphilis nach Anwendung von Arsenobenzol. *Münch. Med. Wchnschr.*, No. 40, Okt. 3, 1911, S. 2111.
- REISSERT. Salvarsan und Auge. *Deut. Med. Wchnschr.*, Nr. 38, Sept. 21, 1911, S. 1744.
- BAUGHER and VAUGHAN. Blood Findings after Salvarsan Injections. *Chicago Path. Soc.*, Vol. viii., No. 6, June 1, 1911, p. 176.
- NEISSER. Zur Blutuntersuchung und 606-Behandlung der Prostitution. *Ztschr. f. Bekämpfung d. Geschlechtskr.*, Bd. xii., H. 6, 1911, S. 201.
- HOKE and RIHL. Experimentelle Untersuchungen über die Beeinflussung des Kreislaufes und der Athmung durch das Salvarsan. *Ztschr. f. exp. Path. u. Therap.*, Bd. ix., H. 9, 1911, S. 332.
- KRUMBEIN. Über Miterkrankung des Vestibularapparates und Salvarsanbehandlung bei Labyrinthlues. *Beiträg. z. Anat. Physiol., Path., etc.*, Bd. v., H. 3, Aug. 19, 1911, p. 181.
- AUDRY. Résultats immédiats obtenus dans le traitement de la syphilis par l'injection intraveineuse d'arsénobenzol. *Annal. de Dermatol. and de Syphil.*, No. 7, juillet 1911, p. 395.
- ARNING. Über Abortivkuren der Syphilis durch Kombinierte Quecksilber-Salvarsanbehandlung. *Deut. Med. Wchnschr.*, Nr. 39, Sept. 28, 1911, S. 1792.
- WELANDER. Einige Versuche zur Behandlung der Syphilis mit Asurol Atoxyl-quecksilber (intramuskulärer und subkutaner) Injektion von Ehrlich's "606" sowie mit Hootine und Hectargyre. *Nord. Med. Arkiv*, 1911, Afd. ii. (Inre med.), H. 1, Nr. 1, p. 1.
- M'INTOSH and FILDES. An Experimental Comparison between "606," Mercury, and Iodide of Potassium as Antisyphilitics. *Lancet*, Sept. 30, 1911, p. 940.
- CRAIG. The Immediate Effect on the Complement Fixation Test for Lues of Treatment with Salvarsan (Arseno-benzol). An Analysis of 225 Cases. *Archiv. of Ind. Med.*, Vol. viii., No. 3, 1911, p. 395.
- AUER. The Effect of Salvarsan upon the Heart in Dogs. *Journ. of Exp. Med.*, Vol. xiv., No. 3, Sept. 1, 1911, p. 248.
- CHRISTOMANOS. Über den therapeutischen Wert des Salvarsans bei Kala-Azar. *Deut. Med. Wchnschr.*, Nr. 37, Sept. 14, 1911, S. 1705.
- DE VERTEUIL and DE VERTEUIL. Salvarsan in Leprosy. *Brit. Med. Journ.*, Sept. 23, 1911, p. 655.

GENERAL AND FUNCTIONAL DISEASES—

- Chorea.**—PIGHINI and ALZINA Y MELIS. Ricerche sui metabolismo nella corea di Huntington. *Riv. Speriment. di Freniat.*, 1911, Vol. xxxvii., p. 757.
- Epilepsy.**—FACKENHEIM. Neue Wege zur Heilung der Epilepsie. *Münch. Med. Wchnschr.*, No. 35, Aug. 29, 1911, S. 1872.

- CHALIER and JUILHE. De l'épilepsie consécutive à la fièvre typhoïde. *Presse méd.*, No. 78, Sept. 30, 1911, p. 776.
- SPANGLER. Crotalin Treatment of Epilepsy. *N. F. Med. Journ.*, Sept. 9, 1911, p. 517.
- ALEXANDER. The Surgical Treatment of some Forms of Epilepsy. *Lancet*, Sept. 30, 1911, p. 932.
- Hysteria.**—BROCA. Coxalgie hystérique. *Presse méd.*, No. 69, août 30, 1911, p. 697.
- VOLPI-GHIRARDINI. Sugli stati secondari isterici. *Riv. Speriment. di Freniat.*, 1911, xxxvii, p. 735.
- Neurasthenia.**—MAJOR. Die Neurasthenie der Jugendlichen. *Med. Klinik*, Nr. 37, Sept. 19, 1911, p. 1424.
- Neuritis.**—PIFFL. Über retrobulbäre Neuritis infolge von Nebenhöhlenerkrankungen. *Ztschr. f. Ohrenheilk.*, etc., Bd. lxxiii, H. 3, 1911, S. 231.
- BREEMEN. Ischias und physikalische Therapie (Auf Grund von 124 Fällen chronischer Ischias). *Ztschr. f. Physik. u. Diät. Therap.*, Bd. xv, H. 9, Sept. 1, 1911, S. 532.
- Paralysis Agitans.**—GRAEFFNER. Das Verhalten des Kehlkopfes bei der Paralysis agitans nebst einigen allgemeineren Bemerkungen über die Krankheit. *Berl. klin. Wchnschr.*, No. 35, Sept. 18, 1911, S. 1709.
- Exophthalmic Goitre, Cretinism, etc.**—BRÉCHOT. A propos du traitement du goitre exophtalmique. *Bullet. gen. de Therap.*, Tome clxii, sept. 23, 1911, p. 491.
- WALLER. The Influence of Salicylates and Kindred Drugs on Thyroid Activity. *Lancet*, Sept. 9, 1911, p. 756.
- MARINE and LENHART. Pathological Anatomy of Exophthalmic Goiter. The Anatomical and Physiological Relations of the Thyroid Gland to the Disease; the Treatment. *Archiv. of Int. Med.*, Vol. viii, No. 3, Sept. 1911, p. 265.
- GOUGET. Le goitre exophtalmique d'origine hydrique. *Presse méd.*, No. 70, sept. 2, 1911, p. 709.
- ROGERS. A Theory for the Pathologic Physiology involved in Disease of the Thyroid Gland, and its Therapeutic Application. Experimental Studies. *Journ. Amer. Med. Assoc.*, Vol. lvii, No. 10, Sept. 2, 1911, p. 801.
- TUCKER. Factors Influencing the Safety of Operation for Goiter. *Journ. Amer. Med. Assoc.*, Vol. lvii, No. 10, Sept. 2, 1911, p. 807.
- LAQUERRIERE. Utilité du traitement électrique dans les inégalités thyroïdiennes ou les syndromes basedowiens frustes. *Archiv. d'électr. méd.*, No. 317, Sept. 10, 1911, p. 229.
- LEOPOLD-LEVI. Le Tempérament thyroïdien. *Gaz. des Hôp.*, No. 102, Sept. 9, 1911, p. 1483.
- THOMPSON and SWARTS. The Influence of the Thyroid and Parathyroid Glands on the Healing of Fractures. *Amer. Journ. Med. Assoc.*, Vol. lviii, No. 9, Aug. 26, 1911.
- LEEPER. Cretinism. *Practitioner*, Sept. 1911, p. 364.
- Addison's Disease.**—GUILLAIN. Pathogénie et traitement de la maladie d'Addison. *Journ. des prat.*, No. 36, Sept. 9, 1911, p. 563.
- Raynaud's Disease.**—BRET and CHALIER. Maladie de Raynaud et Lésions Cardio-vasculaires. (Etude anatomo-clinique et pathogénique.) *Rev. de méd.*, No. 8, août 10, 1911, p. 603.
- Tetany.**—EBSTEIN. Über ein ungewöhnliches Syndrom der Tetanie beim Erwachsenen. *Med. Klinik*, Nr. 39, Sept. 24, 1911, p. 1495.
- KOPLIK.—Tetany and the Spasmophile Tendency in Infancy and Childhood. *Med. Rec.*, Sept. 16, 1911, p. 559.
- CARLSON and JACOBSON. Further Studies on Parathyroid Tetany. *Chicago Path. Soc.*, Vol. viii, No. 6, June 1, 1911, p. 200.
- Tetanus.**—SMITH. Quinine without Tetanus. *Ind. Med. Gaz. Advert.*, Sept. 1911, p. 333.
- CROLEY.—A Case of Tetanus treated by Chloretone. *Ind. Med. Gaz. Advert.*, Sept. 1911, p. 336.
- FINK. Notes on a Case of Tetanus with Two Severe Relapses at Long Intervals. *Ind. Med. Gaz. Advert.*, Sept. 1911, p. 338.

- Alcoholism, etc.**—BURLEY. The Importance of Determining the Causes of Inebriety. *Boston Med. and Surg. Journ.*, Vol. clxv., No. 8, Aug. 24, 1911, p. 275.
- SCHNIDTMANN. Der Einfluss des Alkohols auf den Ablauf der Vorstellungen. *Psychol. Arbeit.*, Bd. vi., H. 2, 1911, S. 300.
- GÖRING. Vergleichende Messung der Alkoholwirkung. *Psychol. Arbeit.*, Bd. vi., H. 2, 1911, S. 261.
- GORRIERI. Ricerche ematologiche nell' Alcoolismo. *Riv. Speriment. di Freniat.*, 1911, Vol. xxxvii., p. 612.
- VALLON. Nécessité d'un asile de sûreté pour les alcooliques criminels. Le meurtre de l'acteur Régnaud. *L'Encéphale*, No. 9, sept. 10, 1911, p. 245.

SPECIAL SENSES AND CRANIAL NERVES—

- STEVENS. A Series of Studies of Nervous Affections in Relation to the Adjustments of the Eyes. *N.Y. Med. Journ.*, Sept. 2, 1911, p. 467.
- BUMKE and TRENDLENBURG. Beiträge zur Kenntnis der Pupillarreflexbahnen. *Klin. Monatsbl. f. Augenheilk.*, Jahrgang xlix., 1911, S. 145.
- HEY. Weitere Bemerkungen zur Prüfung der Pupillarlichtreaktion. *Neurol. Centralbl.*, Nr. 17, Sept. 1, 1911, S. 978.
- BALLET and HIRSCHMANN. Troubles auditifs et oculaires consécutifs à l'emploi de l'hectine. *Presse méd.*, No. 75, sept. 20, 1911, p. 746.
- MARX. Über den galvanischen Nystagmus. *Ztschr. f. Ohrenheilk.*, etc., Bd. 63, H. 3, 1911, S. 201.

MISCELLANEOUS SYMPTOMS AND CASES—

- COLE and SHAWAN. Von Recklinghausen's Disease, with Report of Four Cases. *Cleveland Med. Journ.*, Vol. x., No. 8, Aug. 1911, p. 653.
- JANOWSKI. Über nervöse Diarrhöe. *Med. Klinik*, Nr. 36, Sept. 3, 1911, p. 1377.
- KLIPPEL and WEIL. Les complications nerveuses de l'ulcère de l'estomac (polynévrites et pseudo-tabes polynévritique). *Presse méd.*, No. 76, Sept. 23, 1911, p. 753.
- PRON. Entéro-Colite infectieuse et Entéro-Névrose. *Journ. de Med. de Paris*, No. 35, sept. 2, 1911, p. 677.
- WINKLER. Beitrag zur Kasuistik der Meningocele traumatica spuria. *Wien. klin. Wchnschr.*, Nr. 36, Sept. 7, 1911, S. 1274.
- WARING. Cervical Ribs. *Clin. Journ.*, Sept. 20, 1911, p. 369.
- ERBEN. Über mechanische Einwirkung auf die spastischen Phänomene. *Wien. Med. Wchnschr.*, Nr. 40, Sept. 30, 1911, S. 2587.
- DRINKWATER. Word-deafness in a Girl aged Fourteen. *Liverpool Med.-Chirurg. Journ.*, No. 60, July 1911, p. 384.
- FRÖSCHELS and SIMON. Praktische Erfahrungen bei der Behandlung von Sprachkranken. *Monatsschr. f. Ohrenheilk. u. Laryngo-Rhinol.*, Jahrgang xlv., H. 8, 1911, S. 873.
- VÖLSCH. Beitrag zur Lehre von der Pseudosklerose. (Westphal-Strümpell.) *D. Ztschr. f. Nervenheilk.*, Bd. 42, H. 3-4, 1911, S. 335.
- NEUSTAEDTER. Two Cases of Little's Disease. *Med. Rec.*, Sept. 23, 1911, p. 613.
- LOBO. Intoxication par l'extrait éthéré de fougère mâle. A l'autopsie, cysticerques du cerveau. *Journ. des prat.*, No. 36, Sept. 9, 1911, p. 568.
- MARIE and DARRÉ. Lésions du cerveau dans la trypanosomiase. *Archiv. internat. de Neurol.*, Vol. ii., 9^e série, sept. 1911, p. 137.
- WILLIAMS. Cerebral Rheumatism. *N.Y. Med. Journ.*, Sept. 2, 1911, p. 478.
- MANSON. Neuropathic Joint Disease. *Med. Rec.*, Sept. 23, 1911, p. 623.
- SAINTON. Les syndromes en pathologie nerveuse. Les syndromes thalamiques. *Journ. des prat.*, No. 39, sept. 30, 1911, p. 609.
- BIANCHI. La syndrome pariétale. *Archiv. ital. de Biol.*, Tome lv., Fasc. 2, 1911, p. 188.
- EULENBERG and COHN. Familiäre dystrophische Heredodegeneration. *Neurol. Centralbl.*, Nr. 17, Sept. 1, 1911, S. 963.
- CERLETTI. Nuovi dati sulla patologia dei vasi sanguigni dei centri nervosi e loro rapporti con le forme cliniche. *Riv. Speriment. di Freniat.*, 1911, Vol. xxxvii., p. 774.
- HANNES. Bestehen nachweislich Beziehungen zwischen asphyktischer und schwerer Geburt zu späterhin auftretenden psychischen und nervösen Störungen? *Neurol. Centralbl.*, Nr. 18, Sept. 16, 1911, S. 1035.

PSYCHIATRY

- MACFIE CAMPBELL. The Form and Content of the Psychosis; the Role of Psychoanalysis in Psychiatry. *Rev. Neurol. and Psychiat.*, Vol. ix, Sept. 1911, p. 469.
- SOMMER. Genealogie und Vererbungslehre vom psychiatrischen Standpunkt. *Dent. Med. Wchnschr.*, Nr. 38, Sept. 21, 1911, S. 1733.
- GONNET. Fabulation et délire systématique chronique. *Gaz. des Hôp.*, No. 106, sept. 19, 1911, p. 1531.
- GONNET. Fabulation et délire systématique chronique (fin). *Gaz. des Hôp.*, No. 107, sept. 21, 1911, p. 1543.
- BENON. L'Asthéno-manie post-traumatique. *Gaz. des Hôp.*, No. 97, août 29, 1911, p. 1423.
- BENON. L'Asthéno-manie post-traumatique (fin). *Gaz. des Hôp.*, No. 97, août 31, 1911, p. 1435.
- HOLLAENDER. Démence précoce infantile. *Archiv. internat. de Neurol.*, Vol. ii., 9^e série, sept. 1911, p. 184.
- ERMAKOW. La démence précoce pendant la guerre. *Archiv. internat. de Neurol.*, Vol. ii., 9^e série, sept. 1911, p. 142.
- LUGIATO and LAVIZZARI. La funzione circolatoria nei dementi precoci. *Riv. Speriment. di Freniat.*, 1911, Vol. xxxvii., p. 631.
- RIVA. Contributo allo studio delle forme cliniche attribuite alla Demenza precoce e dei loro esiti. *Riv. Speriment. di Freniat.*, 1911, Vol. xxxvii., p. 820.
- SPIELREIN. Über den psychologischen Inhalt eines Falles von Schizophrenie (Dementia praecox). *Jahrbuch f. Psychoanalyt. u. Psycho-path. Forsch.*, Bd. iii., H. 1, 1911, S. 329.
- SÉRIEUX and LIBERT. La Bastille et ses prisonniers. Contribution à l'étude des asiles de sûreté. (Suite.) *L'Encéphale*, No. 9, sept. 10, 1911, p. 223.
- LEVY-VALENSI. Une forme littéraire du délire d'interprétation. Berbiguier de Terre-Neuve du Thym. *L'Encéphale*, No. 9, sept. 10, 1911, p. 193.
- MAIRET. Le vagabondage constitutionnel des dégénérés. (Suite.) *Ann. méd.-psychol.*, No. 2, sept.-oct. 1911, p. 215.
- DAMAYE. La confusion mentale et ses associations. *Ann. méd.-psychol.*, No. 2, sept.-oct. 1911, p. 250.
- FREUD. Psychoanalytische Bemerkungen über einen autobiographisch beschriebenen Fall von Paranoia (Dementia paranoides). *Jahrbuch f. Psychoanalyt. u. Psycho-path. Forsch.*, Bd. iii., H. 1, 1911, S. 9.
- FERENCZI. Über die Rolle der Homosexualität in der Pathogenese der Paranoia. *Jahrbuch f. Psychoanalyt. u. Psycho-path. Forsch.*, Bd. iii., H. 1, 1911, S. 101.
- BINSWANGER. Analyse einer hysterischen Phobie. *Jahrbuch f. Psychoanalyt. u. Psycho-path. Forsch.*, Bd. iii., H. 1, 1911, S. 228.
- CLAUDE. Une forme de psychasthénie (ancienne folie du doute). *Journ. des prat.*, No. 39, sept. 30, 1911, p. 615.
- ESPOSITO. Paranoia e psicosi maniaco-depressiva. *Riv. Ital. di Neuropatol.*, Vol. iv., Fasc. 9, Sett. 1911, p. 400.
- TAMBURINI. Questioni medico-forensi relative alla Paralisi generale progressiva specialmente in relazione alla capacità di testare. *Riv. Speriment. di Freniat.*, 1911, Vol. xxxvii., p. 712.

TREATMENT *

- WISZWIANSKI. Über die Ziele und die Bedeutung der Nervenmassage für die Behandlung der funktionellen Neurosen. *Med. Klinik*, Nr. 38, Sept. 17, 1911, p. 1459.
- PAUL-BONCOUR. Les bases et la pratique de la gymnastique orthophrénique dans la cure de l'instabilité psycho-motrice. *Prog. méd.*, No. 36, sept. 9, 1911, p. 433.
- WILLIAMS. Physiological Measures in the Therapeutics of Nervous Disease. *Med. Press*, No. 3774, Sept. 6, 1911, p. 245.
- ERBEN. Vorschläge zur Beurteilung und Behandlung der Unfallneurosen. *Wien. Med. Wchnschr.*, Nr. 36, Sept. 2, 1911, S. 2242.
- KAHANE. Über Hochfrequenzströme und ihre Indikationen. *Ztschr. f. Physik. u. Diät. Therap.*, Bd. xv., H. 9, Sept. 1, 1911, S. 519.

* A number of references to papers on Treatment are included in the Bibliography under individual diseases.

Bibliography

ANATOMY

- COLE, SYDNEY. Remarks on some Points in the Fissuration of the Cerebrum (illustrated by three Chinese Brains). *Journ. Anat. and Physiol.*, Vol. xlv., Oct. 1911, p. 54.
- MELLUS, E. LINDON. A Contribution to the Study of the Cerebral Cortex in Man. *Anat. Rec.*, Vol. 5, No. 10, Oct. 20, 1911, p. 473.
- ADDISON, W. H. F. The Development of the Parkinje Cells and of the Cortical Layers in the Cerebellum of the Albino Rat. *Journ. Comp. Neurol.*, Vol. 21, No. 5, Oct. 15, 1911, p. 459.
- DONALDSON and HATAI. A Comparison of the Norway Rat with the Albino Rat in respect to Body Length, Brain Weight, Spinal Cord Weight, and the Percentage of Water in both the Brain and the Spinal Cord. (8 figs.) *Journ. Comp. Neurol.*, Vol. 21, No. 5, Oct. 15, 1911, p. 417.
- DONALDSON. On the Regular Seasonal Changes in the Relative Weight of the Central Nervous System of the Leopard Frog. *Journ. of Morphol.*, Vol. 22, No. 3, Sept. 20, 1911, p. 663.
- GRZYWO-DABROWSKI. Der Tractus olfacto-mesencephalicus basalis der Maus und der Katze. *Anat. Anzeig.*, Bd. 40, No. 4-5, Oct. 18, 1911, p. 156.
- STUMPF. Zur Histologie der Neurohypophyse. (6 text figs.) *Virchow's Archiv.*, Bd. 206, H. 1, Oct. 13, 1911, p. 70.
- PUSATERI. Su di una quistione riguardante il decorso della via acustica centrale nell'uomo. *Ric. ital. di Neuropat., Psichiat. ed Elettrotet.*, Vol. iv., fasc. 10, Oct. 1911, p. 451.
- KRABBE. Sur la glande pinéale chez l'homme. (1 pl.) *Nouv. Icon. de la Salpêtrière*, Ann. 24, No. 4, Juillet-Août 1911, p. 257.
- CAMERON, JOHN. Further Remarks on the Rods and Cones of Vertebrate Retinae. *Journ. Anat. and Physiol.*, Vol. xlv., Oct. 1911, p. 45.
- STARCKE. Paraffinmäntel zur Konservierung von Gehirnen. *Ztschr. f. Wissensch. Mikros.*, Oct. 3, 1911, p. 150.

PHYSIOLOGY

- BROWN, T. GRAHAM, and SHERRINGTON, C. S. Observations on the Localisation in the Motor Cortex of the Baboon ("Papio Anubis"). *Journ. Physiol.*, Vol. xliii., No. 2, Oct. 20, 1911, p. 269.
- DALE, H. H., and LAIDLAW, P. P. Note on a Reversed Action of the Chorda Tympani on Salivary Secretion. *Journ. Physiol.*, Vol. xliii., No. 2, Oct. 20, 1911, p. 196.
- LANGLEY, J. N. The Effect of Various Poisons upon the Response to Nervous Stimuli chiefly in Relation to the Bladder. *Journ. Physiol.*, Vol. xliii., No. 2, Oct. 20, 1911, p. 125.
- KRAMER. On the Function of the Choroid Glands (Choroid Plexuses) of the Cerebral Ventricles and its Relation to the Toxicity of Cerebro-spinal Fluid. *Brain*, Vol. xxxiv., Part I., 1911, p. 39.
- STRONG. On the Olfactory Organs and the Sense of Smell in Birds. *Journ. of Morphol.*, Vol. 22, No. 3, Sept. 20, 1911, p. 619.
- FRANZ. On the Association Functions of the Cerebrum. *Government Hospital for the Insane, Washington Bulletin* No. 3, 1911, p. 5.
- MORAWSKI. Die Durchtrennung des Hypophysenstiemes beim Affen. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. xxx., H. 4, Oct. 1911, S. 27.
- VASSALE. sugli effetti della distruzione della Ghiandola Carotica. *Pathologica*, Ann. III., No. 70, Oct. 1, 1911, p. 549.

- HOSKINS. A Consideration of some Biologic Tests for Epinephrin. *Journ. Pharmacol. and Exp. Therap.*, Vol. iii., No. 1, Sept. 1911, p. 93.
- STEWART. So-called Biological Tests for Adrenalin in Blood, with some Observations on Arterial Hypertonus. *Journ. Exp. Med.*, Vol. xiv., No. 4, Oct. 1, 1911, p. 377.
- INGIER and SCHMORL. Über den Adrenalinegehalt der Nebennieren. *Deut. Arch. f. Klin. Med.*, Bd. 104, H. 1 and 2, p. 125.
- APERT. La portion corticale de la capsule surrénale. Les relations physiologiques et pathologiques avec le cerveau et avec les glandes génitales. *Presse Med.*, No. 86, Oct. 28, 1911, p. 865.

PSYCHOLOGY

- PUTNAM, J. J. A Plea for the Study of Philosophic Methods in Preparation for Psychoanalytical Work. *Journ. Abnorm. Psychol.*, Oct.-Nov. 1911, p. 249.
- MAYER, E. E. A Case illustrating so-called Demon Possession. *Journ. Abnorm. Psychol.*, Oct.-Nov. 1911, p. 265.
- BRILL, A. A. Freud's Theory of Wit. *Journ. Abnorm. Psychol.*, Oct.-Nov. 1911, p. 279.
- RADECKI, W. Recherches Expérimentales sur les Phénomènes Psychoélectriques. *Arch. de Psychol.*, Tome xi., No. 43, Sept. 1911, p. 209.
- WATT. The Elements of Experience and their Integration: or Modalism. *Brit. Journ. of Psychol.*, Vol. iv., Part 2, Sept. 1911, p. 127.
- MULDER. The Fusion of Sensations of Rotation. (1 fig.) *Brit. Journ. of Psychol.*, Vol. iv., Part 2, Sept. 1911, p. 205.
- AVELING. The Relation of Thought-process and Percept in Perception. *Brit. Journ. of Psychol.*, Vol. iv., Part 2, Sept. 1911, p. 211.
- MYERS. A Case of Synesthesia. *Brit. Journ. of Psychol.*, Vol. iv., Part 2, Sept. 1911, p. 228.
- HARTSON. The Psychology of the Club: A Study in Social Psychology. *Pedagog. Semin.*, Vol. xviii., No. 3, Sept. 1911, p. 353.
- HEVEROCH. Ein Beitrag zur psychologischen Analyse der Halluzinationen, Wahnideen und Obsessionen. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 7, H. 2, Oct. 6, 1911, S. 113.
- BORNSTEIN. Über psychotische Zustände bei Degenerativen. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 7, H. 2, Oct. 6, 1911, S. 127.
- STRANGE. Mr Bradley's Doctrine of Knowledge. *Mind*, Oct. 1911, p. 457.
- MACKENZIE. Mind and Body. *Mind*, Oct. 1911, p. 489.
- PETRIE. Aristophanes and Socrates. *Mind*, Oct. 1911, p. 507.
- KLEIN. Negation considered as a Statement of Difference in Identity. *Mind*, Oct. 1911, p. 521.
- HUBER. Assoziationsversuche an Soldaten. *Ztschr. f. Psychol. u. Physiol. d. Sinnesorg.*, Bd. 59, H. 6, 1911, S. 241.
- ROHDE. Assoziationsvorgänge bei Defektpsychosen. *Monatsschr. f. Psychiat. u. Neurol.*, Bd. xxx., H. 4, Oct. 1911, S. 272.
- FROSCHL. Beiträge zur Psychologie der Tiere. *Prag. Med. Wchnschr.*, Nr. 42, Okt. 19, 1911, S. 541.
- FROSCHL. Beiträge zur Psychologie der Tiere (Schluss). *Prag. Med. Wchnschr.*, Nr. 43, Okt. 26, 1911, S. 555.

PATHOLOGY

- RHEIN, J. H. W. A Pathological Study of Türck's Bundle. *Journ. Nerv. and Ment. Dis.*, Vol. 38, No. 9, Sept. 1911, p. 522.
- NAGEOTTE. Note sur l'origine et la destinée des corps granuleux dans la dégénération wallérienne des fibres nerveuses périphériques. *Compt. rend. d. l. Soc. de Biol.*, Oct. 21, 1911, p. 300.
- BLACKBURN. Spindle-celled Endothelial Sarcoma of the Dura Mater. *Government Hospital for the Insane, Washington, Bulletin No. 3, 1911, p. 57.*
- LAFORA. On Neuroglia Karyorrhexis. *Government Hospital for the Insane, Washington, Bulletin No. 3, 1911, p. 77.*

- LAFORA. On the Presence of Amyloid Bodies in the Protoplasm of the Ganglion Cells: A Contribution to the Study of the Amyloid Substance in the Nervous System. *Government Hospital for the Insane, Washington, Bulletin* No. 3, 1911, p. 83.
- LAFORA. Notes on some Phenomena of Reaction and Regeneration of the Central Nervous System. *Government Hospital for the Insane, Washington, Bulletin* No. 3, 1911, p. 93.
- MOUISSET and CHALIER. Cancer primitif et bilatéral des capsules surrénales avec métastases viscérales et crâniennes. (2 figs.) *Rev. de Med.*, Sept. 10, 1911 p. 690.
- MÜLLER and HOUGH. Comparative Globulin Estimation of Luetic Sera *Government Hospital for the Insane, Washington, Bulletin*, No. 3, 1911, p. 73.
- SOWADE. Über Spirochaete pallida-kulturrämpfungen nebst Bemerkungen über die Wassermannsche Reaktion beim Kaninchen. *Deut. Med. Wchnschr.*, Nr. 43, Okt. 19, 1911, S. 1934.
- MEYER. Über den Ausfall der Wassermannschen Reaktion bei mit Dourine infizierten Kaninchen. *Munch. Med. Wchnschr.*, No. 44, Okt. 31, 1911, S. 2318.
- GRAETZ. Praktische und theoretische Erfahrungen mit der Wassermannschen Reaktion. *Monatshefte f. Praktisch. Dermatol.*, Bd. 53, No. 7, Oct. 1, 1911, S. 363.
- WERDT. Wassermann'sche Reaktion an der Leiche. *Correspond.-bl. f. Schweizer Aerzte*, Oct. 10, 1911, p. 993.
- M'CARRISON. The Experimental Transmission of Goitre from Man to Animals. *Ann. of Trop. Med. and Parasitol.*, Aug. 1, 1911, p. 187.
- USIN. Über ein sarkomatöses Hämangioendotheliom der Schilddrüse. *Berl. klin. Wchnschr.*, No. 44, Okt. 30, 1911, S. 1975.

CLINICAL NEUROLOGY

GENERAL—

- FRANZ and RUEDIGER. Sensory Changes in the Skin following the Application of Local Anæsthetics and other Agents. I. Ethyl chloride. *Government Hospital for the Insane, Washington, Bulletin*, No. 3, 1911, p. 15.
- MALONEY, W. J., and KENNEDY, R. F. The Sense of Pressure in the Face, Eye, and Tongue. *Brain*, Vol. xxxiv., Part I., 1911, p. 1.
- SICARD. Extension continue du gros orteil, signe de réaction pyramidale. (6 figs.) *Rev. Neurol.*, No. 19, Oct 15, 1911, p. 405.
- THROCKMORTON. The Rôle of Extensor Toe Reflexes in Neurological Diagnosis. *N. Y. Med. Journ.*, Oct. 14, 1911, p. 786.
- COHN, TOBY. Reflektorische Kniestreckung bei Beklopfen der Fusssohle. *Neurol. Centralbl.*, Nr. 19, Oct. 1, 1911, p. 1107.
- JACOBSON. Zur neurotonischen Reaktion. *Neurol. Centralbl.*, Nr. 20, Oct. 16, 1911, p. 1165.
- FRIEDLÄNDER. Bemerkungen zu Oppenheim's Arbeit; "Über Dauer-schwindel." *Neurol. Centralbl.*, Nr. 20, Oct. 16, 1911, p. 1162.
- BRACHET. La signification morphologique des grandes organes des sens de la tête. *Journ. de Neurol.*, No. 17, Sept. 5, 1911, p. 322.
- BRACHET. La signification morphologique des grandes organes des sens de la tête. *Journ. de Neurol.*, No. 18, Sept. 20, 1911, p. 341.
- NOBL. Die multiple Pseudofibromatose im Zustandsbild der Akrodermatitis atrophicans. *Wien. klin. Wchnschr.*, Nr. 42, Okt. 19, 1911, S. 1455.

MUSCLES—

- WOODS, A. H. Muscular Hypertrophy with Weakness. *Journ. Nerv. and Ment. Dis.*, Vol. xxxviii., No. 9, Sept. 1911, p. 532.
- KENNEDY. Myotonia Atrophica, with a Report of Two Cases. *Journ. Amer. Med. Assoc.*, Vol. lvii., No. 14, Sept. 30, 1911, p. 1117.
- OPPENHEIM, H. Über eine eigenartige Krampfkrankheit des kindlichen und jugendlichen Alters (Dysbasia lordica progressiva, Dystonia musculorum deformans). *Neurol. Centralbl.*, Nr. 19, Oct. 1, 1911, p. 1090.
- BEHRENSROTH. Über Zwerchfellähmung. *Samml. Klin.-Vorträge*, Nr. 642; *Inn. Med.*, Nr. 205, p. 217.

NERVES—

- SINGER. Die Ulnarislähmung. *Monatsschr. f. Psychiat. u. Neurol.*, Bd. xxx., H. 4, Oct. 1911, S. 237.
- MANN. Ein Fall von ungewöhnlicher Erregbarkeitsveränderung nach durchtrennung eines peripheren Nerven (N. accessorius). *Ztschr. f. med. Electrol.*, Bd. 13, H. 3, 1911, S. 80.
- WILKE and ATZLER. Versuche, die Reizwellen im Nerven durch Interferenz sichtbar zu machen. *Pfloger's Archiv.*, Bd. 142, H. 7 and 8, 1911, p. 372.
- BEREND and TEZNER. Anteilnahme des sympathischen Nervensystems an den Erkrankungen des Säuglings. *Monatsschr. f. Kinderheilk.*, Bd. x., Nr. 7, 1911, S. 358.
- HAMBURGER. Über den vasoneurotischen Symptomenkomplex bei Kindern. *Munch. Med. Wchnschr.*, No. 42, Okt. 17, 1911, S. 2201.
- HESS and KÖNIGSTEIN. Über Neurosen der Hautgefäße. *Wien. klin. Wchnschr.*, Nr. 42, Okt. 19, 1911, S. 1460.

SPINAL CORD—

- General.**—JONES, W. A. Resection of the Posterior Roots of the Spinal Cord, with the Report of One Case and Citation of other Cases as a Basis of an Inquiry into the Course of the Sensory Pathway. *Journ. Amer. Med. Assoc.*, Vol. lviii., No. 15, Oct. 7, 1911, p. 1175.
- M'KAY. Observations on the Surgery of Paralysis. *Australas. Med. Gaz.*, Aug. 21, 1911, p. 429.
- FUMAROLA. Contribution à l'étude des difformités congénitales associées des mains. (Ectro-polymacro-syndactylie et micro-thoraco-mélie unilatérale. 2 pl.) *Nouv. Icon. de la Salpêtrière*, Ann. 24, No. 4, Juillet-Août 1911, p. 329.
- Herpes Zoster.**—ADAMSON. Recurrent Herpes of the Buttock. *Brit. Journ. Dermatol.*, Oct. 1911, p. 322.
- Tabs Dorsalis.**—MENDEL und TOBIAS. Die Syphilisätiologie der Frauentabs. *Neurol. Centralbl.*, Nr. 20, Oct. 16, 1911, p. 1158.
- MENDEL und TOBIAS. Tabische Jungfrauen. *Med. Klin.*, Nr. 43, Okt. 22, 1911, p. 1654.
- FUCHS. The Field of Vision in Tabetic Atrophy of the Optic Disk. *Arch. of Ophthalmol.*, Vol. xl., No. 5, Sept. 1911, p. 469.
- Poliomyelitis Anterior Acuta.**—MARSH. Epidemic Anterior Poliomyelitis: Its Symptoms and Treatment. *Med. Press*, Oct. 25, 1911, p. 444.
- BATTEN, F. E. Epidemiology of Poliomyelitis. *Brain*, Vol. xxxiv., Part I, 1911, p. 45.
- CURRIE and BRAMWELL. A Local Epidemic of Acute Poliomyelitis. *Edin. Med. Journ.*, Oct. 1911, p. 315.
- EPSTEIN. Delayed Locomotion after Acute Anterior Poliomyelitis in very Young Children. *Amer. Journ. of Obstetrics*, Vol. lxiv., No. 4, Oct. 1911, p. 609.
- PREVOST, A., and MARTIN, G. Un cas de poliomyélite antérieure aiguë de l'adulte suivi d'autopsie. *L'Encéphale*, No. 10, Oct. 10, 1911, p. 305.
- HOUGH and LAFORA. Some Findings in the Cerebro-spinal Fluid of Acute Anterior Poliomyelitis, Epidemic Form. *Government Hospital for the Insane, Washington, Bulletin*, No. 3, p. 60.
- JONNESCO. Recherches cytopathologiques sur les Ganglions rachidiens dans deux cas de paralysie spinale infantile de date ancienne. (4 pl.) *Nouv. Icon. de la Salpêtrière*, Ann. 24, No. 4, Juillet-Août 1911, p. 273.
- NEUSTAEDTER and THRO. Experimental Poliomyelitis, produced in Monkeys from the Dust of the Sick Room. *N. Y. Med. Rec.*, Oct. 21, 1911, p. 813.

BRAIN—

- ROGERS. Brain Surgery. *Journ. Amer. Med. Assoc.*, Vol. lvii., No. 14, Sept. 30, 1911, p. 1110.
- STERN. Beitrag zur operativen Behandlung der Bechterewschen Krankheit. *Dent. Med. Wchnschr.*, Nr. 43, Okt. 26, 1911, S. 1933.
- BRAMANN. Weitere Erfahrungen über den Balkenstich bei Hirnerkrankungen. *Arch. f. Klin. Chirug.*, Bd. 97, H. 11, 1911, S. 195.

- Meningitis.**—BLACKBURN. Pachymeningitis interna. *Government Hospital for the Insane, Washington, Bulletin* No. 3, 1911, p. 37.
- MANASSE. Über rhinogene traumatische Meningoencephalitis. *Deut. Med. Wchnschr.*, Nr. 41, Okt. 12, 1911, S. 1888.
- ESCHBACH, H., and BAUR, J. Méningo-encéphalite tuberculeuse subaiguë non-folliculaire à bacilles de Koch. *L'Encéphale*, No. 10, Oct. 10, 1911, p. 327.
- HESNARD, A. Catatonisme au cours d'une méningite tuberculeuse à évolution suraiguë et à forme délirante. *L'Encéphale*, No. 10, Oct. 10, 1911, p. 341.
- STEPP. Über Hirninfluenza. *Munch. Med. Wchnschr.*, No. 43, Okt. 24, 1911 S. 2269.
- Abscess.**—Abscess du cerveau: Causes, symptômes, diagnostic, traitement. *Gaz. des Hôp.*, Oct. 19, 1911, p. 1706, and Oct. 26, 1911, p. 1741 (fin).
- WAGENEN. Report of a Case of Perisinus Abscess, Suppurative Lateral Sinus Thrombosis, Jugular Ligation, Recovery. *Med. Rec.*, Sept. 30, 1911, p. 674.
- Embolism.**—DUJOL. Rétrécissement mitral latent, infarctus multiples des reins, embolie cérébrale avec ramollissement et hémiplegie, embolie du tronc de l'aorte abdominale avec gangrène massive des membres inférieurs. *Lyon Méd.*, Oct. 29, 1911, p. 897.
- Hæmorrhage.**—HARDY. Le point douloureux parotidien dans les hémorragies cérébrales graves. *Gaz. des Hôp.*, Oct. 3, 1911, p. 1604.
- Cerebellum.**—PANDOLFI. Sindrome cerebellare da malaria. *Annal. di Neurol.*, Anno xxix., Fasc. III., 1911, p. 101.
- WILLIAMS, TOM A. Disorders of the Cerebellar Apparatus; Diagnosis and Treatment. *Med. Press*, Oct. 25, 1911, p. 447.
- SPILLER, W. G. Displacement of the Cerebellum from Tumour of the Posterior Cranial Fossa. *Brain*, Vol. xxxiv., Part I., 1911, p. 29.
- Tumours.**—SULLIVAN, W. C. Note on Two Cases of Tumour of the Prefrontal Lobe in Criminals; with Remarks on Disorders of Social Conduct in Cases of Cerebral Tumour. *Lancet*, Oct. 7, 1911, p. 1004.
- PALLASSE and ROUBIER. Un cas de cancer cérébral présentant des particularités anatomo-cliniques. *Lyon Méd.*, Oct. 22, 1911, p. 863.
- ROSENTAL. Histologische Befunde beim sog. Pseudotumor cerebri. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. xxx., H. 4, Oct. 1911, S. 163.
- Microcephaly.**—KRYZAN. Über den anatomischen Befund in einem Falle von mikrocephaler Idiotie. *Monatsschr. f. Psychiat. u. Neurol.*, Bd. xxx., H. 4, Oct. 1911, S. 321.
- Hemiplegia.**—LHERMITTE. Les "petits signes" de l'hémiplegie organique et leur valeur sémiologique. *Rev. Neurol.*, No. 19, Oct. 15, 1911, p. 406.
- Aphasia, etc.**—GUTZMANN. Über Aphasie und Anarthrie. *Deut. Med. Wchnschr.*, Nr. 42, Okt. 19, 1911, S. 1923.
- GOLDSTEIN, KURT. Über Apraxie. *Med. Klin.*, H. 10, 1911, S. 271.
- Syphilis.**—SCHOENBERG and BURCHILL. A Few Suggestive Experiments for a Cutaneous Reaction for the Diagnosis of Syphilis; Preliminary Theoretical Report. *N.Y. Med. Journ.*, Oct. 14, 1911, p. 784.
- GASTINEL and PELISSIER. Syphilis, Paralysie diphtérique, Herpès vélopalatin. *Gaz. des Hôp.*, Oct. 5, 1911, p. 1620.
- IGERSHEIMER. Syphilis als Erblindungsursache bei jugendlichen Individuen. *Ztschr. f. Bekämpf. d. Geschlechtskr.*, Bd. xii., H. 7, Sept. 1911, S. 225.
- LEWITT. Zur internen Behandlung der Syphilis, besonders mit Hg-Gludine. *Fortsch. d. Med.*, Nr. 42, Oct. 19, 1911, S. 992.
- ADLER. Syphilis of the Anorectal Region. *N.Y. Med. Rec.*, Oct. 21, 1911, p. 823.
- Salvarsan.**—Symposium on Salvarsan from the Clinical Standpoint. Introduction; H. P. Towle. The Parasitology of Syphilis; H. C. Ernst. The Chemistry of Salvarsan; W. F. Boos. The Preparation of Salvarsan for Injection; J. Godsoe. Clinical Observations on the Use of Salvarsan, with Special Reference to its Administration; H. Cabot. Personal Impressions of the Value of Salvarsan; S. Pollitzer. Personal Experiences with Salvarsan; A. Post. *Boston Med. and Surg. Journ.*, Oct. 5, 1911, pp. 505-516.

- FOUQUET. Les différents modes de préparation et d'administration de l'arsénobenzol dans le traitement de la syphilis (techniques et doses). *Gaz. des Hôp.*, Oct. 24, 1911, p. 1723.
- MACKEE. A Comparison of the Results obtained by the Intravenous Administration of Acid and Alkaline Solutions of Salvarsan. *N. Y. Med. Journ.*, Oct. 21, 1911, p. 825.
- HOOVER. "606": Its Action on the Eye and Ear. *Med. Journ.*, Oct. 21, 1911, p. 832.
- BECK. Über bilaterale Ertaubung und Vestibularausschaltung nach Salvarsan. *Münch. Med. Wchnschr.*, No. 42, Okt. 17, 1911, S. 2217.
- VOSS. Schwere akute Intoxikation nach intravenöser Salvarsaninfusion. *Münch. Med. Wchnschr.*, No. 44, Okt. 31, 1911, S. 2336.
- HALLOPEAU. Sur un cas de mort survenu après deux injections de 606, chez un sujet relativement sain. *Bullet. d. l'Acad. d. Méd.*, No. 32, Oct. 10, 1911, p. 125.
- GRAHAM. Salvarsan. A Note of Warning. *Journ. Trop. Med. and Hygiene*, Oct. 16, 1911, p. 308.
- KLAUSNER. Ein Fall von Reinfektion nach Salvarsan. *Münch. Med. Wchnschr.*, No. 44, Okt. 31, 1911, S. 2335.
- MUTO and JAMES. Über die Ausscheidung des Arsens nach der intramuskulären Injektion des Dioxydiamidoarsenobenzols. *Therap. Monatshefte*, Oct. 1911, S. 599.
- KNOWLES. A Salvarsan Series. *Ind. Med. Gaz. Advert.*, Oct. 1911, p. 390.
- FOWLER. A Simple Means of Administering Salvarsan. *Ind. Med. Gaz. Advert.*, Oct. 1911, p. 383.
- HÜFLER. Zur Technik der Salvarsanbehandlung. (Illustr.) *Münch. Med. Wchnschr.*, No. 43, Okt. 24, 1911, S. 2275.
- WENNIGER. Die intravenöse Salvarsanbehandlung für die Praxis. *Monatshefte f. Praktisch. Dermatol.*, Bd. 53, No. 7, Oct. 1, 1911, S. 387.
- LYDSTON. A Brief on the Salvarsan Treatment of Syphilis. *N. Y. Med. Journ.*, Oct. 21, 1911, p. 820.
- KLINGMÜLLER. Unsere bisherigen Erfahrungen mit Salvarsan. *Münch. Med. Wchnschr.*, No. 41, Okt. 10, 1911, S. 2145.
- ZEISSL. Die Salvarsanbehandlung der Syphilis. *Berl. klin. Wchnschr.*, No. 40, Okt. 2, 1911, S. 1785.
- FAVENTO. Beitrag zur Salvarsanbehandlung der Syphilis. *Münch. Med. Wchnschr.*, No. 41, Okt. 10, 1911, S. 2169.
- FINGER. Die Nebenwirkungen des Salvarsans. *Wien. Med. Wchnschr.*, Nr. 42, Okt. 14, 1911, S. 2702.
- LAQUER. Bemerkungen zur Salvarsanliteratur. *Münch. Med. Wchnschr.*, No. 41, Okt. 10, 1911, S. 2173.
- GENNERICH. Die Ziele einer ausreichenden Syphilisbehandlung und die provokatorische Salvarsaninjektion bei zweifelhafter Syphilis. *Münch. Med. Wchnschr.*, No. 43, Okt. 24, 1911, S. 2263.
- JACQUET and DEBAT. Essai sur l'action trophique du mercure et du Salvarsan chez les syphilitiques. *Annal. de Dermatol. et de Syphil.*, Tome II, No. 8-9, Août-Sept. 1911, p. 449.
- GENNERICH. Der weitere Verlauf der Salvarsanbehandlung im Kaiserlichen Marine Lazarett Kiel-Wik. *Berl. klin. Wchnschr.*, No. 40, Okt. 2, 1911, S. 1787.
- WESTPHAL. Einige Beobachtungen bei der Salvarsanbehandlung im Garnison-lazarett Windhuk, Deutsch-Sudwestafrika. *Münch. Med. Wchnschr.*, No. 44, Okt. 31, 1911, S. 2332.
- OPPENHEIM, M. Über einige durch Salvarsanbehandlung bedingte Eigentümlichkeiten kutaner Syphilis. *Wien. klin. Wchnschr.*, Nr. 40, Okt. 5, 1911, S. 1390.
- IMHOFER. Erfahrungen über Salvarsan in der Oto-, Rhino-Laryngologie. *Prag. Med. Wchnschr.*, Nr. 41, Okt. 12, 1911, S. 531.
- EHRLER, F. Über schädliche Wirkung durch lokale Reaktion nach Salvarsanbehandlung in Fällen von Erkrankung der oberen Luftwege. *Monatschr. f. Ohrenheilk. u. Laryngo-Rhinol.*, Jahrg. xl., H. 9, 1911, S. 1045.
- REMESON. Zur Frage über Mittel zur Bekämpfung des Typhus recurrens. (Anwendung des Salvarsans.) *Münch. Med. Wchnschr.*, No. 42, Okt. 17, 1911, S. 2215.
- HARTWICH. Erfolg der Salvarsanbehandlung bei einem Fall von Malaria. *Münch. Med. Wchnschr.*, No. 44, Okt. 31, 1911, S. 2333.

- CARYOPHYLLIS and SOTIRIADES. Zur Kasuistik des Kala-Azar und seiner Behandlung mit Salvarsan. *Deut. Med. Wchnschr.*, Nr. 41, Okt. 12, 1911, S. 1896.
- LAVERAN. L'arsénobenzol dans le traitement des cobayes et des chiens infectés par T. gambiense. *Bull. d. l. Soc. de Path. Exot.*, Tome iv., No. 7, Juillet 12, 1911, p. 472.
- MESNIL. Au sujet du traitement des infections à T. gambiense par le 606. Discussion. *Bull. d. l. Soc. de Path. Exot.*, Tome iv., No. 7, Juillet 12, 1911, p. 476.

GENERAL AND FUNCTIONAL DISEASES—

- Epilepsy.**—MOORE, A. D. Researches in Epilepsy. *Lancet*, Oct. 14, 1911, p. 1072.
- COLLINS, M. A. Causes of Sudden Death in Epilepsy, and some Points in the Treatment of Epilepsy. *Journ. Ment. Science*, Vol. lvii., Oct. 1911, p. 635.
- PAPPENHEIM. Zur Epilepsiefrage. *Wien. Med. Wchnschr.*, Nr. 41, Okt. 7, 1911, S. 2650.
- VOLLAND. Bericht über vier Fälle mit dem Kombination Epilepsie-Paramyoclonus multiplex. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. xxx., H. 4, Oct. 1911, S. 180.
- JOHNSTON, GEORGE. Epileptic Fits. *Practitioner*, Oct. 1911, p. 577.
- BIANCHI. L'Influenza dell' Alcool sui movimenti del cervello. Contributo alla etiologia della epilessia. *Annal. di Neurol.*, Anno xxix., Fasc. iii. 1911, p. 83.
- HELLER, FRITS. Über Pathologie und Therapie der Epilepsie im Altertum. *Arch. Internat. pour l'Histoire d. l. Med. et la Géograph. Méd.*, Ann. 17, Sept. 1911, p. 589.
- LAFORA and GLUECK. Contribution to the Histopathology and Pathogenesis of Myoclonic-Epilepsy. *Government Hospital for the Insane, Washington, Bulletin* No. 3, 1911, p. 96.
- GARNETT, G. H. On Deviation of Complement in Cases of So-called Idiopathic Epilepsy. *Journ. Mental Science*, Vol. lvii., Oct. 1911, p. 676.
- Chorea.**—CHARLES. Chorea and its Treatment. *Dublin Med. Journ.*, Nov. 1, 1911, p. 336.
- MARCHAND and PETIT. Chorée et Troubles Mentaux (considerations anatomoméntaux). *Rev. de Psychiat.*, Sept. 1911, p. 358.
- Hysteria.**—LÉPINE, JEAN. Hystérie. Insuffisance rénale. Retention chlorurée. *Rev. de Méd.*, Sept. 10, 1911, p. 744.
- Neurasthenia.**—BERNHEIM. De la neurasthénie grippale. *Rev. de Méd.*, Sept. 10, 1911, p. 673.
- MACLAREN and DAUGHERTY. Pyloroptosis: Gastric Atony as the Original Cause of Neurasthenia, and its Cure. *Annals of Surg.*, Part 225, Sept. 1911, p. 306.
- Neuritis.**—CLARK and TAYLOR. Echter Tic Douloureux der sensiblen Fasern des N. facialis. Operation und Heilung. *Neurol. Centralbl.*, Nr. 20, Oct. 16, 1911, p. 1154.
- TAPTAS. Les injections d'alcool dans le ganglion de Gasser à travers le trou ovale. *Presse Méd.*, No. 80, Oct. 7, 1911, p. 798.
- SICARD. La Sciatique (pathogénie, diagnostic, et traitement). *Journ. de Méd. de Paris*, No. 42, Oct. 21, 1911, p. 811, and No. 41, Oct. 14, 1911, p. 791.
- Exophthalmic Goitre, Cretinism, etc.**—DELORE and ALAMARTINE. La ligature des artères thyroïdiennes principalement dans la maladie de Basedow. (9 figs.) *Rev. de Chirurg.*, Ann. 31, No. 9, Sept. 10, 1911, p. 391.
- PORTER. The Thyroid, with special reference to Hyperthyroidism, and a New Method of Treatment. *Journ. Amer. Med. Assoc.*, Vol. lvii., No. 14, Sept. 30, 1911, p. 1120.
- PETITAVEL. Über eigentümliche herdförmige Degenerationen der Thyreoidea-Epithelien bei Purpura eines Neonatus. *Virchow's Archiv.*, Bd. 206, Heft 1, Oct. 13, 1911, p. 1.
- VOIVENEL and FONTAINE. Acrocyanose et hypothyroïdie. *Le Prog. Méd.*, No. 41, Oct. 14, 1911, p. 497.
- JABOULAY. La Thyroïdectomie dans les goitres ordinaires. *Lyon Méd.*, Oct. 29, 1911, p. 898.
- ARGAUD, BILLARD and BATAILLE. Sur le rôle presseur du muscle sterno-thyroïdien et sur son hypertrophie au cours du goitre. *Journ. d. l'Anat.*, Sept.-Oct. 1911, p. 535.

SIGAUX. Cancer thyroïdien latent opéré depuis quatre ans. *Lyon Méd.* Oct. 22, 1911, p. 836.

FOUILLLOUX. Hémorragie dans un goitre énorme. Déplacement laryngé. Crises épileptiformes. Albuminurie. Enucléation. Guérison. *Lyon Méd.*, Oct. 29, 1911, p. 900.

SALTER. Four Cases of Myxedema. *Australas. Med. Gaz.*, Aug. 21, 1911, p. 441.

Tetany.—SCHULTZE. Über das Verhalten der mechanischen Muskeleerregbarkeit bei der Tetanie und das Zungenphänomen (nebst Bemerkungen über die Wirkung der Epithelkörpersubstanz). *Munch. Med. Wchnschr.*, No. 44, Okt. 31, 1911, S. 2313.

Addison's Disease.—BERNSTEIN. Über den Blutzuckergehalt bei Addison'scher Krankheit. *Berl. klin. Wchnschr.*, No. 40, Okt. 2, 1911, S. 1794.

Alcoholism, etc.—MASON. Differential Diagnosis of Alcoholic Coma from Other Forms of Coma. *Med. Press*, Oct. 18, 1911, p. 420.

M'MECHAN. Alcoholism as a Complicating Factor of Anæsthesia. *Med. Rec.*, Sept. 30, 1911, p. 669.

BARNES. Pupillary Disturbances in the Alcoholic Psychoses. *Government Hospital for the Insane, Washington, Bulletin*, No. 3, 1911, p. 112.

MÜLLER. Sammelbericht über Arbeiten auf dem Gebiete der Alkoholpsychosen aus den Jahren 1906-1910. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 4, H. 1, Oct. 7, 1911, S. 1.

SPECIAL SENSES AND CRANIAL NERVES—

STEVENS. A Series of Studies of Nervous Affections in Relation to the Adjustments of the Eyes. *N. Y. Med. Journ.*, Sept. 30, 1911, p. 667.

DOLGANOFF. Über die Gravidität als Ursache der Erkrankung des Sehnerven und der Netzhaut. *Deutsch. Med. Wchnschr.*, Nr. 41, Okt. 12, 1911, S. 1893.

VERHOEFF. The Pathology of Superficial Punctate Keratitis, with Remarks on Neuropathic Keratitis in General, and on a Hitherto Undescribed Lesion of the Iris. *Arch. of Ophthalmol.*, Vol. xl., No. 5, Sept. 1911, p. 486.

ROTHSCHILD. Über die Behandlung der Facialis- und Accessoriuslähmung. *Centrbl. f. d. Grenzgeb. d. Med. u. Chirurg.*, Bd. xiv., Nr. 14, Oct. 9, 1911, S. 529.

TOMLIN, H. Coal-Miners' Nystagmus. *Med. Chron.*, Oct. 1911, p. 17.

PUTNAM. The Value of Lumbar Puncture in the Treatment of Aural Vertigo. *Boston Med. and Surg. Journ.*, Sept. 28, 1911, p. 472.

BLAKE. Consideration of the Mechanism of Pressure in the Production of Vertigo, and Report of Cases. *Boston Med. and Surg. Journ.*, Sept. 28, 1911, p. 469.

MORTON, J. P. Equilibrium Tests. *Canadian Pract. and Review*, Oct. 1911, p. 602.

BECK. Isolierte Neuritis des Nervus vestibularis. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. iii., H. 10, Sept. 30, 1911, S. 881.

HÖCHSINGER. Fazialisphänomen und jugendliche Neuropathie. *Wien. klin. Wchnschr.*, Nr. 43, Okt. 26, 1911, S. 1487.

FOIX, CHARLES. Hémisindrome bulbaire par lésions périphérique intracranienne des nerfs bulbaires. (2 pl., 1 fig.) *Nouv. Icon. de la Salpêtrière*, Ann. 24, No. 4, Juillet-Août 1911, p. 303.

MISCELLANEOUS SYMPTOMS AND CASES—

GORDINIER, HERMON C. Occlusion of the Posterior Inferior Cerebellar Artery. *Albany Med. Annals*, Vol. xxxii., No. 10, Oct. 1911, p. 585.

PICK. Über Dystrophia adiposo-genitalis bei Neubildung im Hypophysengebiet, insbesondere vom praktisch-chirurgischen Standpunkt. *Deut. Med. Wchnschr.*, Nr. 42, Oct. 19, 1911, S. 1930.

FERRIER. Nervous Affections of Traumatic Origin. *Clin. Journ.*, Oct. 18, 1911, p. 17.

ROUX. Les douleurs gastriques d'origine nerveuse. *Journ. de prat.*, Oct. 14, 1911, p. 643.

NILES. Psychic Indigestion: a Study. *Med. Rec.*, Oct. 14, 1911, p. 771.

- WILLIAMS, T. A. A Case of Partial Tremulous Scrivener's Palsy. *N. Y. Med. Rec.*, Oct. 7, 1911, p. 733.
- WILLSON. Fatal Vasomotor Gangrene. *N. Y. Med. Record*, Oct. 7, 1911, p. 724.
- BITTORF. Ist beim Diabetes mellitus eine Überfunktion der Nebennieren nachweisbar? *Münch. Med. Wchnschr.*, No. 42, Okt. 17, 1911, S. 2213.
- POLLITZER. Über alimentäre Galaktosurie nervösen Ursprungs. *Wien. klin. Wchnschr.*, Nr. 40, Okt. 5, 1911, S. 1393.
- RAPMUND. Über Strychninvergiftung vom gerichtsarztlichen Standpunkt. *Vierteljahrsschr. f. gericht. Med.*, Oct. 1911, S. 243.
- MANN. Erregbarkeitssteigerung bei narkoleptischen Anfällen. *Ztschr. f. med. Elektrol.*, Bd. 13, H. 3, 1911, S. 82.
- JACOBSON. Tonische Krampfzustände an den unteren Extremitäten auf funktioneller Grundlage. *Berl. klin. Wchnschr.*, No. 44, Okt. 30, 1911, S. 1985.
- MACHT. A Case of Aspirin Poisoning. *Med. Rec.*, Oct. 21, 1911, p. 826.
- ROLLESTON, J. D. The Blood-Pressure in Diphtheria. *Brit. Journ. Child. Dis.*, Vol. viii., No. 94, Oct. 1911, p. 433.
- SHELDON, S. Cause of Sudden Death after Diphtheria. *Australas. Med. Gaz.*, Aug. 21, 1911, p. 451.
- D'ABUNDO. Sopra alcuni particolari effetti delle proiezioni cinemetografiche nei nevrotici. *Riv. Ital. di Neuropat., Psichiat. ed Elettrotet.*, Vol. iv., Fasc. 10, Oct. 1911, p. 433.

PSYCHIATRY

- DAWSON, W. R. The Presidential Address on the Relation between the Geographical Distribution of Insanity and that of Certain Social and other Conditions in Ireland. *Journ. Mental Science*, Vol. lvii., Oct. 1911, p. 571.
- DRAPES, T. The Personal Equation in Alienism. *Journ. Mental Science*, Vol. lvii., Oct. 1911, p. 598.
- GRAHAM, W. Psychotherapy in Mental Disorders. *Journ. Mental Science*, Vol. lvii., Oct. 1911, p. 617.
- LEEPER, R. R. Note on Hereditary Insanity from a Practical Standpoint. *Journ. Mental Science*, Vol. lvii., Oct. 1911, p. 628.
- MAPOTHER, ED. Mental Symptoms in Association with Choreiform Disorders. *Journ. Mental Science*, Vol. lvii., Oct. 1911, p. 646.
- SEWELL, W. T., and M'DOWALL, C. A Report upon the Bacteriological Investigation of the Blood in Fifty Cases of Insanity. *Journ. Mental Science*, Vol. lvii., Oct. 1911, p. 661.
- STEWART, S. J. On Mental Inspection in Schools. *Journ. Mental Science*, Vol. lvii., Oct. 1911, p. 669.
- KNAPP, P. C. The Early Symptoms of General Paralysis. *Journ. Nerv. and Ment. Dis.*, Vol. xxxviii., No. 9, Sept. 1911, p. 513.
- RÉGIS. La question de la paralysie générale traumatique au point de vue médico-légal. *Journ. de Neurol.*, No. 18, Sept. 20, 1911, p. 345.
- HYSLOP. Clinical Lecture on General Paralysis of the Insane. *Med. Press*, Nov. 1, 1911, p. 468.
- HOLLAENDER. Démence précoce infantile (suite). *Arch. internat. de Neurol.*, Oct. 1911, p. 220.
- EZIO, ALVISI. Sindromi paralitiformi nell' inizio della demenza precoce. *Riv. ital. di Neuropat., Psichiat. ed Elettrotet.*, Vol. iv., Fasc. 10, Oct. 1911, p. 443.
- MIKULSKI. Démence précoce. Acromégalie atypique. (1 pl.) *Nouv. Icon. de la Salpêtrière*, Ann. 24, No. 4, Juillet-Août 1911, p. 324.
- MOSSE. Déformations acromégaloïdes (4 pl.) *Nouv. Icon. de la Salpêtrière*, Ann. 24, No. 4, Juillet-Août 1911, p. 313.
- BLACKBURN. On the Median Anterior Cerebral Artery as found among the Insane. *Government Hospital for the Insane, Washington, Bulletin* No. 3, 1911, p. 51.
- BLACKBURN. Atrophy of the Brain in the Insane. *Government Hospital for the Insane, Washington, Bulletin*, No. 3, 1911, p. 45.
- DELMAS. Les modalités cliniques des psychoses puerpérales. *Journ. des prat.*, No. 41, Oct. 14, 1911, p. 641.
- FAMENNE. Psychoses avec délire systématisé, consécutives à une infection gonococcique. *Prog. Med.*, Oct. 28, 1911, p. 523.
- AGGAZZOTTI. Sul più piccolo intervallo di tempo percettibile nei processi psichici. *Arch. di Fisiol.*, Vol. ix., Fasc. vi., Sept. 1, 1911, p. 523.

- BARKER. Acute Parotitis with Orchitis, followed by Insanity. *Australian Med. Journ.*, Vol. i., No. 7, Sept. 2, 1911, p. 68.
- HOLLOW. A Rare Mental Condition. *Australian Med. Journ.*, Vol. i., No. 7, Sept. 2, 1911, p. 69.
- SIEBERT. Über den Einfluss des Fiebers auf den Verlauf von Geisteskrankheiten. *St Petersburg Med. Wchnschr.*, No. 40, Okt. 1911, S. 425.
- DAVIDSON. Abstract of Paper on Mentally Defective Children. *Australian Med. Journ.*, Vol. i., No. 7, Sept. 2, 1911, p. 67.
- MOLLER. Geistige Störungen nach Schlaganfällen und ihre gerichts-ärztliche Bedeutung. *Vierteljahrsschr. f. gericht. med.*, Oct. 1911, S. 290.
- SÉRIEUX, P., and LIBERT, L. La Bastille et ses prisonniers. Contribution à l'étude des asiles de sûreté (suite et fin). *L'Encéphale*, No. 10, Oct. 10, 1911, p. 366.

TREATMENT *

- LABORDERIE. Le traitement électrique des névralgies. *Journ. des prat.*, No. 43, Oct. 28, 1911, p. 693.
- V. HIPPEL. Über Palliativtrepanation bei Papillitis. *Centralbl. f. d. med. Wissensch.*, No. 43, Oct. 28, 1911; *Klin. Monatsbl. f. Augenheilk.*, Bd. 49, 1911, S. 47.
- KABANE. Über Hochfrequenzströme und ihre Indikationen (Schluss). *Ztschr. f. Physikal. u. Diät. Therap.*, Bd. 15, H. 10, Oct. 1, 1911, p. 600.
- MACEDO. Die direkten und indirekten Applikationen der Elektrizität in der Medizin und Chirurgie (Fortsetzung). *Ztschr. f. med. Elektrol.*, Bd. 13, H. 3, 1911, S. 72.
- DAVIDSOHN. Eine neue Hochfrequenzelektrode. *Deut. Med. Wchnschr.*, Nr. 43, Okt. 26, 1911, S. 1991.
- FRANK. Report of the Psychotherapeutic Clinic at the Cornell Dispensary. *N. Y. Med. Journ.*, Sept. 30, 1911, p. 671.
- DONATH. Psychotherapeutische Richtungen. *Med. Klin.*, Nr. 43, Okt. 22, 1911, S. 1645.

* A number of references to papers on Treatment are included in the Bibliography under individual diseases.

Bibliography

ANATOMY

JORDAN. The Histogenesis of the Pineal Body of the Sheep. *Amer. Journ. of Anat.*, Vol. xii., No. 3, Nov. 1911, p. 249.

NEMILOFF. Über die peripherische Schicht von Nervenzellen und Nervenfasern im Rückenmark höherer Wirbeltiere. *Arch. f. Mikr. Anat.*, Bd. 77, H. 4, 1911, S. 433.

KEMMETMÜLLER. Über eine seltene Varietät der Art. vertebralis. *Anat. Hefte*, Bd. 44, H. 2, 1911, p. 305.

AUERBACH. MØLLGAARDS vitale Fixation und meine Kritik de Neurofibrillenlehre. *Anat. Anzeig.*, Bd. 40, Nr. 6/7, Nov. 1, 1911, S. 182.

FERGUSON. The Application of the Silver Impregnation Method of Bielschowsky to Reticular and other Connective Tissue. 1. The Mature Tissues. *Amer. Journ. of Anat.*, Vol. xii., No. 3, Nov. 1911, p. 277.

EDINGER and WALLENBERG. Bericht über die Leistungen auf dem Gebiete der Anatomie des Centralnervensystems im Laufe der Jahre 1909 und 1910. *Schmidt's Jahrbücher d. in- und ausland. Gesam. Med.*, H. 10, Okt. 10, 1911, S. 1.

PHYSIOLOGY

MULDER. Analysis of the Rotation-Reflex in the Frog. *Quart. Journ. Exp. Physiol.*, Vol. iv., No. 3, Oct. 1911, p. 231.

TULLIO. Contribution à la connaissance des rapports entre les excitations sensorielles et les mouvement réflexes. *Arch. ital. de Biol.*, Tome lv., F. iii., Nov. 1911, p. 377.

GRAHAM BROWN, T. Studies in the Physiology of the Nervous System. VIII. Neural Balance and Reflex Reversal, with a Note on Progression in the Decerebrate Guinea-pig. *Quart. Journ. Exp. Physiol.*, Vol. iv., No. 3, Oct. 1911, p. 273.

OINUMA, SOROKU. On the Question of the Presence in the Frog of Vaso-dilator Fibres in the Posterior Roots of the Nerves supplying the Foot and in the Sciatic Nerve. *Journ. Physiol.*, Vol. xlii., Nos. 3 and 4, Nov. 22, 1911, p. 343.

SASSE, ERICH. Zur Physiologie des Nervensystems der Insekten. *Ztschr. f. allg. Physiol.*, Bd. xiii., H. 1 and 2, 1911, S. 69.

BRODIE, T. G., and CULLIS, W. C. The Innervation of the Coronary Vessels. *Journ. Physiol.*, Vol. xliii., Nos. 3 and 4, Nov. 20, 1911, p. 313.

HIRSCHFELD. Die Beeinflussung der Hirngefäße durch chemische, physikalische und psychische Reize. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. iv., H. 3, Nov. 1911, S. 193.

PELLIZZI. Recherches histologiques et expérimentales sur les plexus choroïdiens (avec deux planches). *Archiv. ital. de Biol.*, Tome lv., F. iii., Nov. 1911, p. 313.

FOA, CARLO. Ricerche sul ritmo degli impulsi motori che partono dai centri nervosi. Colle Tavole I.-III. *Ztschr. f. allg. Physiol.*, Bd. xiii., H. 1 and 2, 1911, p. 35.

COBB. The Influence of Illumination of the Eye on Visual Acuity. *Amer. Journ. of Physiol.*, Vol. xxix., No. 1, Nov. 1, 1911, p. 76.

SOLLMANN and PILCHER. The Reaction of the Vasomotor Centre to Asphyxia. *Amer. Journ. of Physiol.*, Vol. xxix., No. 1, Nov. 1, 1911, p. 100.

- HALFPENNY, JASPER and JOHN A. GUNN. Note on Extirpation of the Thyroid Gland in Monkeys. *Quart. Journ. Exp. Physiol.*, Vol. iv., No. 3, Oct. 1911, p. 237.
- SIMPSON, SUTHERLAND, and ANDREW HUNTER. The Possible Vicarious Relationship between the Pituitary and Thyroid Glands. *Quart. Journ. Exp. Physiol.*, Vol. iv., No. 3, Oct. 1911, p. 257.
- HANDELSMANN and HORSLEY. Preliminary Note on Experimental Investigations on the Pituitary Body. *Brit. Med. Journ.*, Nov. 4, 1911, p. 1150.
- FALTA and PRIESTLEY. Beiträge zur Regulation von Blutdruck und Kohlehydrat-Stoffwechsel durch das chromaffine System. *Berl. klin. Wchschr.*, No. 47, Nov. 20, 1911, S. 2102.
- OWEN, A. G. W., and SHERRINGTON, C. S. Observations on Strychnine Reversal. *Journ. Physiol.*, Vol. xliii., Nos. 3 and 4, Nov. 20, 1911, p. 232.
- ROEMER. Untersuchungen zur Pharmakologie des Veronals. I. Allgemeine Symptomatologie und Dosierung. *Arch. f. Exp. Path. u. Pharm.*, Bd. 66, H. 4, Nov. 1911, S. 241.
- JACOBJ and ROEMER. Untersuchungen zur Pharmakologie des Veronals. II. Einfluss des Veronals auf Temperatur, Atmung und Zirkulation. *Arch. f. Exp. Path. u. Pharm.*, Bd. 66, H. 4, Nov. 1911, S. 261.
- JACOBJ. Untersuchungen zur Pharmakologie des Veronals. III. Die Eigenart der Veronalwirkung, eine Folge seiner spezifisch peripheren Lähmungswirkung auf die Gefasswand. *Arch. f. Exp. Path. u. Pharm.*, Bd. 66, H. 4, Nov. 1911, S. 296.

PSYCHOLOGY

- RAKIĆ. Gedanken über Erziehung durch Spiel und Kunst. *Arch. f. d. ges. Psychol.*, Bd. xxi., H. 4, 1911, S. 521.
- WEBER, ERNST. Bemerkung zu der Abhandlung "Die körperlichen Begleiterscheinungen seelischer Vorgänge." *Arch. f. d. ges. Psychol.*, Bd. xxi., H. 4, 1911, S. 579.
- LESCHKE, ERICH. Erwiderung auf obige Bemerkung von Ernst Weber zu meiner Abhandlung "Die körperlichen Begleiterscheinungen seelischer Vorgänge." *Arch. f. d. ges. Psychol.*, Bd. xxi., H. 4, 1911, S. 581.
- BERKHAN. Über talentierte Schwachsinnige. *Ztschr. d. Jugendlich. Schwachsinn.*, Bd. v., H. 1, 1911, S. 25.
- SOMMER. Die psychologischen Untersuchungsmethoden. *Klinik f. psych. u. nerv. Krankheit.*, Bd. vi., H. 3, 1911, S. 205.
- ROSSOLIMO. Die psychologischen Profile. Zur Methodik der quantitativen Untersuchung der psychischen Vorgänge in normalen und pathologischen Fällen. *Klin. f. psych. u. nerv. Krankheit.*, Bd. vi., H. 3, 1911, S. 249.

PATHOLOGY

- RANKE. Über feinste glöse (spongioplasmatische) Strukturen im foetalen und pathologisch veränderten Zentralnervensystem und über eine Methode zu ihrer Darstellung. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 7, H. 4, Nov. 1911, S. 355.
- ACHÚCARRO. Darstellung von neugebildeten Fasern des Gefässbindegewebes in der Hirnrinde eines Falles von progressiver Paralyse, durch eine neue Tannin-Silbermethode (mit 7 Textfiguren). *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 7, H. 4, Nov. 1911, S. 375.
- LHERMITTE and KLARFELD. Étude anatomo-pathologique de certaines lésions atrophiques du cortex cérébral du vieillard. *L'Encéphale*, No. 11, Nov. 10, 1911, p. 412.
- FULLER. A Study of the Miliary Plaques found in Brains of the Aged. *Amer. Journ. of Insanity*, Vol. lxxviii., No. 2, Oct. 1911, p. 147.
- BESTA, CARLO. Sui modo di comportarsi del reticolo pericellulare in alcuni processi patologici del tessuto nervoso. *Riv. di Patol. nerv. e ment.*, Vol. xvi., F. 10, Ott. 11, 1911, p. 604.
- ROCCHI. Sul metodo Ciaccio per la Colorazione dei Lipoidi. *Lo Speriment.*, Anno lxx., F. iv., Nov. 22, 1911, p. 441.

- AZZURRINI. Contributo allo Studio della Patologia delle Sierose. Parte II.—Mezzi di difesa delle sierose contro le infezioni. *Lo Speriment.*, Anno lxx., F. iv., Nov. 22, 1911, p. 343.
- SAJOUS. The Thyreoparathyreoid Secretion as Wright's Opsonin. *N.Y. Med. Journ.*, Nov. 11, 1911, p. 961.
- LEONÉ, GÉRARD, and FRANCON. Les capsules surrénales dans l'érysipèle. *Presse Med.*, No. 91, Nov. 15, 1911, p. 929.
- BROOKS, CLYDE. A Note on the Absence of Adrenalin in Malignant Renal Hypernephromas. *Journ. Exp. Med.*, Vol. xiv., No. 5, Nov. 1, 1911, p. 550.
- MANSFELD, OTTO. Inversio uteri bei Hypoplasie des Adrenalsystems. *Tauffer's Abhand.*, Bd. ii., H. 1, 1912, S. 149.

CLINICAL NEUROLOGY

GENERAL—

- COLLINS and KAPLAN. Studies of the Blood in Disease commonly called Nervous Disease. *Amer. Journ. Med. Sci.*, Nov. 1911, p. 702.
- MORAVCSIK. Diagnostische Assoziationsuntersuchungen. *Allg. Ztschr. f. Psychiat.*, Bd. 78, H. 5, 1911, S. 626.
- BASKER. Family Nervous Disease. *Proc. Roy. Soc. of Med.* (Dis. of Child. Sect.), Vol. iv., No. 9, July 1911, p. 198.

MUSCLES—

- BATTEN. Progressive Spinal Muscular Atrophy of Infants and Young Children. *Proc. Roy. Soc. of Med.* (Neurol. Sect.), Vol. iv., No. 9, July 1911, p. 53.
- WERDT. Zur Histologie der Dystrophia musculorum progressiva. *Correspondenz-Bt. f. Schweizer Ärzte*, No. 31, Nov. 1, 1911, S. 1057.

NERVES—

- KIDD, LEONARD J. The Sensory Phrenic and its Organs. *Rev. of Neurol. and Psychiat.*, Vol. ix., No. 11, Nov. 1911, p. 587.
- WEBER. Tropho-neurotic (?) Separation of Nails. *Proc. Roy. Soc. of Med.* (Dermatol. Sect.), Vol. iv., No. 9, July 1911, p. 137.
- MATHIEU. Les crises solaires et les lésions du pancréas. *Journ. de Med. de Paris*, No. 44, Nov. 4, 1911, p. 851.

SPINAL CORD—

- General.**—DURLACH. Beitrag zur Auffassung und Therapie der schmerzhaften Armlähmung der Kinder. *Berl. klin. Wchnschr.*, No. 47, Nov. 20, 1911, S. 2111.
- STOFFEL. Eine neue Operation zur Beseitigung der spastischen Lähmungen. *Münch. Med. Wchnschr.*, No. 47, Nov. 21, 1911, S. 2493.
- NEWMARK. Klinischer Bericht über den siebenten Fall von spastischer Paraplegie in einer Familie und Ergebnis der dritten Autopsie aus derselben Familie. *Deut. Ztschr. f. Nervenheilk.*, Bd. 42, H. 5 and 6, 1911, S. 419.
- Tabes Dorsalis.**—ZOEPPFEL. Tabische Knochen- und Gelenkerkrankungen. *Berl. klin. Wchnschr.*, No. 45, Nov. 6, 1911, S. 2032, and No. 46, Nov. 13, 1911, S. 2072.
- DOERR. Die Operation von Mingazzini-Foerster in der Behandlung der Tabes. *Wien. Med. Wchnschr.*, Nr. 45, Nov. 4, 1911, S. 2881.
- FOERSTER. Resection of the Posterior Spinal Nerve-Roots in the Treatment of Gastric Crises and Spastic Paralysis. *Proc. Roy. Soc. of Med.* (Surgical Sect.), Vol. iv., No. 9, July 1911, p. 226.
- GROVES. On the Division of the Posterior Spinal Nerve-Roots: I. for Pain, II. for Visceral Crises, III. for Spasm. An Address Introductory to a Discussion on the Subject. *Proc. Roy. Soc. of Med.* (Surgical Sect.), Vol. iv., No. 9, July 1911, p. 199.
- Poliomyelitis Anterior Acuta.**—MOSS-BLUNDELL. Epidemic Anterior Poliomyelitis in Huntingdonshire. *Brit. Med. Journ.*, Nov. 4, 1911, p. 1157.
- GREGOR and HOPPER. Clinical Observations on an Epidemic of Acute Poliomyelitis in Cornwall. *Brit. Med. Journ.*, Nov. 4, 1911, p. 1154.

SOLTAU. Acute Poliomyelitis: with Special Reference to the Outbreak in Plymouth, Stonehouse, and Devonport. *Brit. Med. Journ.*, Nov. 4, 1911, p. 1151.

FORBES, J. GRAHAM. A Note on the Cerebro-spinal Fluid in Acute Poliomyelitis. *Lancet*, Nov. 18, 1911, p. 1400.

LEITAS. La butyro-réaction de Noguchi-Moore dans la poliomyélite antérieure aiguë. *Arch. d. Méd. d. Enf.*, Tome xiv., No. 11, Nov. 1911, p. 842.

Tumours.—ELSBERG and BEER. The Operability of Intramedullary Tumours of the Spinal Cord. A Report of Two Operations, with Remarks upon the Extrusion of Intraspinal Tumours. *Amer. Journ. Med. Sci.*, Nov. 1911, p. 636.

Myelitis.—HOLDEN. A Report of Four Cases of Acute Disseminated Myelitis, with Retrobulbar Degeneration of the Optic Nerves. *Arch. of Ophthalm.*, Vol. xl., No. 6, Nov. 1911, p. 569.

LUNGHETTI. Su di alcune particolarità istologiche rilevate nello studio di un caso di mieloma multiplo. *Pathologica*, Anno iii., No. 72, Nov. 1, 1911, p. 620.

Hæmatomyelia.—GERHARDT. Beitrag zur Lehre von der Hæmatomyelie. *Deut. Ztschr. f. Nervenheilk.*, Bd. 42, H. 5 and 6, 1911, S. 409.

BRAIN—

General.—DREYFUS. Tödliche Lähmung der Gehirngefäße nach Kopftrauma. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 7, H. 4, Nov. 1911, S. 447.

CLARK, L. PIERCE. Remarks upon Some Phases of the Spastic-Paretic Syndrome of Cerebral Diplegia. *Amer. Journ. Med. Sci.*, Nov. 1911, p. 718.

LEGRY, PARVU, and BAUMGARTNER. Diagnostic des kystes hydatiques du cerveau par la recherche des auticorps spécifiques dans le liquide céphalo-rachidien. *Presse Méd.*, No. 88, Nov. 4, 1911, p. 895.

HOLBECK. Wo und wie sollen wir die Schädelchüsse im Felde operieren. *S. Petersburg. Med. Wchnschr.*, No. 44, Okt.-Nov. 1911, S. 469.

HORAND and PUILLET. Aspect mie de pain ou état vermoulu et foyers lacunaires du cerveau. *Rev. Neurol.*, No. 20, Oct. 30, 1911, p. 462.

Encephalitis.—PREOBRASHENSKY. Über Encephalitis acuta. *Neurol. Centralbl.*, Nr. 21, Nov. 1, 1911, S. 1221.

MILLER. Chronic Encephalitis. *Proc. Roy. Soc. of Med. (Dis. of Child. Sect.)*, Vol. iv., No. 9, July 1911, p. 197.

Meningitis.—DONNELL. Cerebro-spinal Meningitis. *Pediatrics*, Vol. xxiii., No. 10, Oct. 1911, p. 598.

BARJON and DUJOL. De la méningite cérébro-spinale aiguë à staphylocoque : à propos d'un cas traité sans succès par le sérum de Dopter. *Lyon Méd.*, No. 46, Nov. 12, 1911, p. 1005.

FAIVRE. Méningite paralytique et héroïnomanie. *Arch. internat. de Neurol.*, Vol. ii., Série 9^e, Nov. 1911, p. 325.

LABARRIÈRE. Sur cinq cas mortels de méningite d'origine otique. *Rev. hebdom. d. Laryngol., d'Otol. et de Rhinol.*, No. 45, Nov. 11, 1911, p. 577.

PAPAPANAGIOTU. La méningite cérébro-spinale chez les enfants, la sérothérapie antiméningococcique. *Arch. d. Méd. d. Enf.*, Tome xiv., No. 11, Nov. 1911, p. 801.

LOGAN TURNER. The Spread of Bacterial Infections from the Nasal and Naso-Pharyngeal Cavities by Way of Lymphatic Channels. *Edin. Med. Journ.*, Nov. 1911, p. 409.

Hydrocephalus.—GRAHAM. Hydrocephalus and Buphthalmos. *Proc. Roy. Soc. of Med. (Dis. of Child. Sect.)*, Vol. iv., No. 9, July 1911, p. 197.

Abscess.—FRANK and HASSIN. Three Cases of Brain Abscess. *Med. Rec.*, Oct. 28, 1911, p. 873.

BUTZENGEIGER. Zur Chirurgie des Stirnhirnabszesses. *Munch. Med. Wchnschr.*, No. 46, Nov. 14, 1911, S. 2449.

JACOB. Des abcès amibiens du cerveau de l'aisselle qui compliquent les luxations de l'épaule. *Rev. de Chir.*, Ann. 31, No. 10, Oct. 10, 1911, p. 548.

Hæmorrhage.—MEYER, ARTHUR W. Ueber traumatische meningeale Spätblutungen. *Mitteil. u. d. Grenzgeb. d. Med. u. Chir.*, Bd. 23, H. 5, 1911, S. 878.

- Cerebellum.**—STERN. Beitrag zur operativen Behandlung der Bechterewschen Krankheit. *Deut. Med. Wchnschr.*, Nr. 43, Okt. 26, 1911, S. 1983.
- BREGMAN and KRUKOWSKI. Beitrag zu den Geschwülsten des Kleinhirnbrückenwinkels. *Deut. Ztschr. f. Nervenheilk.*, Bd. 42, H. 5 and 6, 1911, S. 378.
- GORIA, CARLO. Cisti del cervelletto e peduncoli cerebellari. Contributo clinico, anatomo-patologico e studio delle vie cerebellari. *Riv. di Patol. nerv. e ment.*, Vol. xvi., F. 10, Ott. 11, 1911, p. 585.
- WRIGHT. Cerebellar Ataxia. *Proc. Roy. Soc. of Med. (Dis. of Child. Sect.)*, Vol. iv., No. 9, July 1911, p. 190.
- Tumours.**—JACQUIN and MARCHAND. Syndrome pseudo-bulbaire: tumeur du corps calleux. (Soc. de Psychiat. de Paris.) *L'Encéphale*, No. 11, Nov. 10, 1911, p. 464.
- SEROG. Die psychischen Störungen bei Stirnhirntumoren und die Beziehungen des Stirnhirns zur Psyche. *Allg. Ztschr. f. Psychiat.*, Bd. 78, H. 5, 1911, S. 583.
- Pituitary Tumours.**—SPIESS. Tumor der Hypophysengegend auf endonasalem Wege operiert. *Münch. Med. Wchnschr.*, No. 47, Nov. 21, 1911, S. 2503.
- PICK. Über Dystrophia adiposo-genitalis bei Neubildungen im Hypophysengebiet, insbesondere vom praktisch-chirurgischen Standpunkt. *Deut. Med. Wchnschr.*, Nr. 42, 43, 44, and 45, 1911.
- Hemiplegia.**—GORDON. Finger Phenomenon. A New Diagnostic Sign of Organic Hemiplegia. Preliminary Report. *Journ. Amer. Med. Assoc.*, Vol. lvii., No. 20, Nov. 11, 1911, p. 1591.
- HUMPHRY. Post-diphtheritic Paralysis and Hemiplegia. *Proc. Roy. Soc. of Med. (Dis. of Child. Sect.)*, Vol. iv., No. 9, July 1911, p. 195.
- Friedreich's Ataxia.**—LAMBRIOR. Un cas de maladie de Friedreich avec autopsie. (3 fig.) *Rev. Neurol.*, No. 21, Nov. 15, 1911, p. 525.
- Aphasia, etc.**—MAILLARD and BLONDEL. Apraxie and Aproxie. (Soc. de Psychiat. de Paris.) *L'Encéphale*, No. 11, Nov. 10, 1911, p. 477.
- Syphilis.**—MOTT, F. W. The Differential Diagnosis of Syphilis and Parasyphilis of the Nervous System. *Lancet*, Nov. 18, 1911, p. 1392; *Brit. Med. Journ.*, Nov. 18, 1911, p. 1337.
- FRENCH, H. C. Recent Developments in the Recognition, Treatment, and Prophylaxis of Syphilis. *Lancet*, Nov. 11, 1911, p. 1315, and Nov. 18, 1911, p. 1385.
- FRENCH. Recent Developments in the Recognition, Treatment, and Prophylaxis of Syphilis. *Med. Press*, Nov. 15, 1911, p. 526, and Nov. 22, 1911, p. 551.
- FINGER. Über die neuesten Errungenschaften in der Pathologie und Therapie der Syphilis. *Med. Klin.*, Nr. 46, Nov. 12, 1911, S. 1759.
- LEREDDE. Les règles nouvelles du traitement de la syphilis. *Journ. des Prat.*, No. 46, Nov. 18, 1911, p. 741.
- NOGUCHI. Hautallergie bei Syphilis, ihre diagnostische und prognostische Bedeutung. *Münch. Med. Wchnschr.*, No. 45, Nov. 7, 1911, S. 2372.
- SIEBERT and MIRONESCU. Über die Brauchbarkeit der Syphilisreaktion nach Karvonen. *Deut. Med. Wchnschr.*, Nr. 45, Nov. 9, 1911, S. 2084.
- LEVADITI and LATAPIE. Le séro-diagnostic de la syphilis d'après les résultats enregistrés à l'Institut Pasteur au cours de l'année, 1910-1911. *Presse Med.*, No. 88, Nov. 4, 1911, p. 889.
- BAYLY. The Comparative Value of the Various Methods of Antisyphilitic Treatment as estimated by the Wassermann Reaction. *Lancet*, Nov. 11, 1911, p. 1332.
- SACHS. Über den Einfluss des Cholesterins auf die Verwendbarkeit der Organ-extrakte zur Wassermann'schen Syphilisreaktion. *Berl. klin. Wchnschr.*, No. 46, Nov. 13, 1911, S. 2066.
- OIGAARD. Behandlung der syphilitischen Herz- und Gefässkrankheiten. *Ztschr. f. Klin. Med.*, Bd. 73, H. 5 and 7, 1911, S. 440.
- PIED. Les syphilis latentes cardio-aortiques. *Journ. des Prat.*, No. 45, Nov. 11, 1911, p. 726.
- MASSIA. Le poumon syphilitique chez l'adulte. *Gaz. des Hôp.*, No. 128, Nov. 11, 1911, p. 1829, and No. 131, Nov. 18, 1911, p. 1871.

- Salvarsan.**—V. ZEISSL. Neuerliche Bemerkungen zur Behandlung der Syphilis mit Salvarsan und Häufigkeit der Nervenerkrankung durch Syphilis in der Zeit vor Anwendung des Salvarsans. *Berl. klin. Wchnschr.*, No. 45, Nov. 6, 1911, S. 2017.
- BROWN, R. DODS. The Use of Salvarsan in Mental Diseases. *Rev. of Neurol. and Psychiat.*, Vol. ix., No. 11, Nov. 1911, p. 612.
- HECHT. Die bisherigen Ergebnisse der Abortivbehandlung der Syphilis mittels Exzision, Salvarsan und Quecksilber. *Deut. Med. Wchnschr.*, Nr. 44, Nov. 2, 1911, S. 2039.
- BAR. Résultats donnés par le salvarsan à la Clinique Tarnier. *Bullet. d. l'Acad. de Méd.*, No. 35, Oct. 31, 1911, p. 198.
- BAILLIART. L'action du salvarsan sur les yeux. *Bullet. gén. d. Therap.*, Tome cxlii., Nov. 8, 1911, p. 661.
- DOLGANOFF. Über die Wirkung des Salvarsan auf die Augenerkrankungen. *Berl. klin. Wchnschr.*, No. 45, Nov. 6, 1911, S. 2018.
- HÜBNER. Der heutige Standpunkt in der Salvarsantherapie. *Fortsch. d. Med.*, No. 46, Nov. 16, 1911, S. 1081.
- WAELECH. Beitrag zur Indikation und Wirkung kleinster Salvarsandoson. *Münch. Med. Wchnschr.*, No. 47, Nov. 21, 1911, S. 2498.
- SIEBERT. Die Technik der Salvarsanbehandlung. *Ztschr. f. Krankenpflege*, No. 10, Okt. 1911, S. 295.
- FÜRESZ. Einige Bemerkungen zur intravenösen Anwendung des Salvarsans. *Wien. Med. Wchnschr.*, Nr. 46, Nov. 11, 1911, S. 2953.
- HEUCK. Ueber Spätexantheme nach intravenösen Salvarsaninjektionen. *Münch. Med. Wchnschr.*, No. 46, Nov. 14, 1911, S. 2451.
- BARDET. Les accidents de la salvarsanothérapie. *Bullet. gén. d. Therap.*, Tome cxlii., Nov. 15, 1911, p. 687.
- GAUCHER. Mort par le 606. *Bullet. d. l'Acad. de Méd.*, No. 35, Oct. 31, 1911, p. 196.
- EHRLICH. La toxicité du salvarsan. *Bullet. gén. d. Therap.*, Tome cxlii., Nov. 15, 1911, p. 692.
- AUER, J. A Note on Salvarsan and Acute Anaphylaxis. *Journ. Exp. Med.*, Vol. xiv., No. 5, Nov. 1, 1911, p. 497.
- UMBER. Zur viszerale Syphilis (Pancreatitis syphilitica mit Diabetes, akute gelbe Leberatrophy) und ihrer Heilung durch Salvarsan. *Münch. Med. Wchnschr.*, No. 47, Nov. 21, 1911, S. 2499.
- HOLSCHER. Heilung eines Falles von Rhinosklerom durch Salvarsan. *Arch. f. Laryngol. u. Rhinol.*, Bd. 25, H. 3, 1911, S. 526.
- AYLEN. A Report on Six Cases of Syphilis treated by Salvarsan at the Station Hospital, Nowshera. *Journ. Roy. Army Med. Corps*, Vol. xvii., No. 5, Nov. 1911, p. 505.
- FLU. Bericht über die Behandlung von 700 Fällen von Framboesia tropica und 4 Fällen von Pian Bois mit Salvarsan. *Münch. Med. Wchnschr.*, No. 45, Nov. 7, 1911, S. 2373.

GENERAL AND FUNCTIONAL DISEASES—

- Epilepsy.**—DAVENPORT and WEEKS. A First Study of Inheritance of Epilepsy. *Journ. Nerv. and Ment. Dis.*, Nov. 1911, p. 641.
- ALEXANDER. Ein ungewöhnlicher Fall von Reflexepilepsie. *Berl. klin. Wchnschr.*, No. 46, Nov. 13, 1911, S. 2068.
- SOUTZO. Sur une Forme d'Epilepsie convulsive, permanente en fonction directe de l'alcoolisme chronique.—L'Epilepsie alcoolique constitutionnelle. *Ann. Med.-Psychol.*, Vol. lxix., No. 3, Nov.-Dec. 1911, p. 383.
- ALFORD. Brown-Séquard Epilepsy in Guinea-pigs. *Boston Med. and Surg. Journ.*, Oct. 26, 1911, p. 635.
- Chorea.**—LADAME. Suicide et chorée de Huntington. *L'Encéphale*, No. 11, Nov. 10, 1911, p. 422.
- MARTIN. Syndrome choréique dans un cas de trypanosomiase humaine. (Soc. de Psychiat. de Paris.) *L'Encéphale*, No. 11, Nov. 10, 1911, p. 460.
- Megrim.**—WANHILL. Note on a Common Form of Headache similar to but less severe than Migraine. *Journ. Roy. Army Med. Corps*, Vol. xvii., No. 5, Nov. 1911, p. 505.

Neurasthenia.—SAVAGE. A Lecture on Neurasthenia and Mental Disorders. *Med. Mag.*, Nov. 1911, p. 620.

Neuritis.—SCHLESINGER, HERMANN. Über Neuritis multiplex cutanea. *Neurol. Centralbl.*, Nr. 21, Nov. 1, 1911, S. 1218.

CROSTHWAIT. Clinical Notes on a Case of Neuritis of the Fifth Nerve extending to the Gasserian Ganglion. *Journ. Roy. Army Med. Corps.*, Vol. xvii., No. 5, Nov. 1911, p. 502.

TINEL and GASTINEL. Un cas de sciatique radriculaire tuberculeuse, avec autopsie. *Rev. Neurol.*, No. 20, Oct. 30, 1911, p. 453.

AGUGLIA. Polinevrite in soggetto sifilitico alcoolista, interessante i quattro arti ed il vii° bilateralmente. *Riv. ital. di Neuropatol.*, Vol. iv., F. ii., Nov. 1911, p. 493.

DEMANCHE and MÉNARD. La polynévrite syphilitique existe-t-elle? *Presse Med.*, No. 91, Nov. 15, 1911, p. 930.

Alcoholism, etc.—SIMS WOODHEAD. The Influence of Alcohol on Body Temperature and on the Heart. *Med. Press*, Nov. 22, 1911, p. 553.

TOM A. WILLIAMS. The Role and Methods of Psychotherapy in the Care of the Psychasthenia predisposing to Inebriety. The Functions of the General Practitioner apart from those of the Specialist and the Sanatorium. *Med. Rec.*, Nov. 4, 1911, p. 919.

Exophthalmic Goitre, Cretinism, etc.—KOCHER, THEODOR. Ueber Basedow. *Arch. f. klin. Chir.*, Bd. 96, H. 2, 1911, S. 403.

NIXON. Vomiting in Graves' Disease and its Treatment. *Brit. Med. Journ.*, Nov. 18, 1911, p. 1354.

BEILBY. On the Diagnosis and Treatment of Thyroid Gland Diseases. *Albany Med. Ann.*, Vol. xxxii., No. 11, Nov. 1911, p. 637.

PORTER. Diseases of the Thyroid in the Female. *Amer. Journ. of Obstetrics*, Nov. 1911, p. 781.

WRIGHT. Case of Cretinism. *Proc. Roy. Soc. of Med. (Dis. of Child. Sect.)*, Vol. iv., No. 9, July 1911, p. 189.

Paralysis Agitans.—SCHULTZE. Zur Symptomatologie der Parkinsonschen Krankheit. *Deut. Med. Wchnschr.*, Nr. 44, Nov. 2, 1911, S. 2026.

Tetanus.—WILLIAMS. Two Cases of Tetanus. *Austral. Med. Journ.*, Oct. 14, 1911, p. 138.

SPECIAL SENSES AND CRANIAL NERVES—

BUM. Die subakute Sehnenscheidenentzündung und ihre Behandlung. *Wien. klin. Wchnschr.*, Nr. 47, Nov. 23, 1911, S. 1642.

WILLIAMS. The Association of Mental Symptoms with Contusions of the Eye. *Boston Med. and Surg. Journ.*, Nov. 9, 1911, p. 714.

WRIGHT. Paralysis of Right Third Nerve following Ethmoidal Operation. *Proc. Roy. Soc. of Med. (Laryngol. Sect.)*, Vol. iv., No. 9, July 1911, p. 159.

ROTHSCHILD. Über die Behandlung der Facialis- und Accessoriuslähmung. *Centralbl. f. d. Grenzgeb. d. Med. u. Chir.*, Bd. xiv., Nr. 15, Okt. 28, 1911, S. 561.

WRIGHT. The Relation of the Biophysical Laws of Osmosis to Nasal Vasomotor Processes. *N. Y. Med. Journ.*, Oct. 28, 1911, p. 861.

MASSIER. Interprétation diagnostique d'un cas de Vertige Intense post-opératoire par l'étude du vertige nystagmique. *Rev. hebdom. de Laryngol., d'Otol. et de Rhinol.*, No. 44, Nov. 4, 1911, p. 550.

MISCELLANEOUS SYMPTOMS AND CASES—

FRY, FRANK B. Imperative Pains. *Journ. Nerv. and Ment. Dis.*, Nov. 1911, p. 671.

PRITCHARD. The Causes of Convulsions in Infancy and Childhood. *Clin. Journ.*, Nov. 22, 1911, p. 97.

GUDDEN. Arsenhaematose bei nervöser und psychischer Erschöpfung. *Deut. Med. Wchnschr.*, Nr. 45, Nov. 9, 1911, S. 2090.

- STIÉRLIN. Nervöse und psychische Störungen nach Katastrophen. Unter besonderer Berücksichtigung der Eisenbahnkatastrophe von Müllheim. *Deut. Med. Wchnschr.*, Nr. 44, Nov. 2, 1911, S. 2028.
- DESCHAMPS. Astasie-abasie par suggestion maternelle. *Journ. des Prat.*, No. 46, Nov. 18, 1911, p. 744.
- HAYNES. Infantile Spastic Paraplegia. *Proc. Roy. Soc. of Med.* (Dis. of Child. Sect.), Vol. iv., No. 9, July 1911, p. 192.
- CAMPOS. Remarques sur le phénomène de Piltz-Westphal et le signe de Ch. Bell. *Rev. Neurol.*, No. 21, Nov. 15, 1911, p. 540.
- CHATELAIN. Note sur la Sidération par la Douleur. *Ann. Med.-Psychol.*, Vol. lxxix., No. 3, Nov.-Dec. 1911, p. 396.
- AUERBACH. Zum Wesen des sogen. Knötchen- oder Schwielenkopfschmerzes. *Deut. Ztschr. f. Nervenheilk.*, Bd. 42, H. 5 and 6, 1911, S. 399.
- PLEIKART, STUMPF. Über die Abhängigkeit der visuellen Bewegungsempfindung und ihres negativen Nachbildes von den Reizvorgängen auf der Netzhaut. (Vorläufige Mitteilung.) *Ztschr. f. Psychol.*, Bd. 59, H. 5 and 6, 1911, S. 321.
- BYLINA. Normale Pankreassekretion als Synthese von nervösem und humoralem Einfluss. *Pflüger's Archiv. f. d. ges. Physiol.*, Bd. 142, 1911, S. 531.
- GALLEMAERTS. Perforation de la voûte orbitaire. *Bull. d. l'Acad. Roy. de Méd. d. Belgique*, Tome xxv., No. 8, Sept. 30, 1911, p. 732.
- ANTON and v. BRAMANN. Weitere Mitteilungen über Gehirndruckentlastung mittelst Balkenstiches. *Münch. Med. Wchnschr.*, No. 45, Nov. 7, 1911, S. 2369.
- HUTINEL. Idiotie mongolienne. *Journ. des Prat.*, No. 44, Nov. 4, 1911, p. 709.
- WRIGHT. Child with a Peculiar Gait (? Functional Ataxia). *Proc. Roy. Soc. of Med.* (Dis. of Child. Sect.), Vol. iv., No. 9, July 1911, p. 191.
- BLUMER. Bronzed Diabetes (Hæmochromatosis). *N.Y. Med. Rec.*, Nov. 4, 1911, p. 922.
- THOMA. Untersuchungen an Zwangszöglingen in Baden. *Allg. Ztschr. f. Psychiat.*, Bd. 78, H. 5, 1911, S. 699.
- BUDER. Unsere Stellung zur Organisation des Krankenpflegepersonals. *Allg. Ztschr. f. Psychiat.*, Bd. 78, H. 5, 1911, S. 692.
- JULIUSBURGER. Die Homosexualität im Vorentwurf zu einem deutschen Strafgesetzbuch. *Allg. Ztschr. f. Psychiat.*, Bd. 78, H. 5, 1911, S. 674.
- REBAUDI. Der Schweißdrüsen-Apparat während der normalen und pathologischen Schwangerschaft. *Beitr. z. Geburtsh. u. Gyn.*, Bd. 17, H. 1, 1911, S. 11.
- TANDLER. Die Unterbindung der Arteria carotis externa am Ligamentum stylomandibulare. *Arch. f. klin. Chir.*, Bd. 96, H. 2, 1911, S. 553.
- KLECZKOWSKI. Das Vorhandensein von Adrenalin im Blutserum der Glaukomkranken. Ein Beitrag zur Ätiologie des Glaukoms. *Klin. Monatsbl. f. Augenheilk.*, Okt. 1911, S. 417.
- BAGENOFF. Myriatchénie et Klikouschisme. *Arch. internat. de Neurol.*, Vol. ii., Série 9e., Nov. 1911, p. 273.
- STUBER. Über Diabetes insipidus, zugleich ein Beitrag zur Entstehung des Kochsalzfiebers (mit 3 Kurven). *Deut. Arch. f. klin. Med.*, Bd. 104, H. 3 and 4, 1911, S. 394.
- HERZFELD. Morbus Pageti. *St Petersburg. Med. Wchnschr.*, No. 44, Okt.-Nov. 1911, S. 472.
- BISSET. A Case of Chronic Ulcerative Endocarditis following Subacute Rheumatism. *Practitioner*, Nov. 1911, p. 707.

PSYCHIATRY

- LORENZ. Manic Depressive Insanity, then Syphilis, later General Paralysis. *Med. Rec.*, Nov. 11, 1911, p. 974.
- CANDLER. Wassermann Reaction in General Paralysis, the Control of a Series of Wassermann Reactions in Cases of General Paralysis by Post-mortem Examination. *Lancet*, Nov. 11, 1911, p. 1320.

- HOLLAENDER. Démence précoce infantile (fin). *Arch. internat. de Neurol.*, Vol. ii, Série 9e, Nov. 1911, p. 294.
- BALLER. Spannungserscheinungen am Gefässsystem und ihre differenzialdiagnostische Verwertbarkeit für die Dementia praecox. *Allg. Ztschr. f. Psychiat.*, Bd. 78, H. 5, 1911, S. 613.
- ITTEN. Heilversuche mit Nuclein-Injektionen bei Schizophrenie (Dementia praecox). *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 7, H. 4, Nov. 1911, S. 384.
- JONES, ROBERT. Treatment of Early Cases of Insanity. *Med. Press*, Nov. 22, 1911, p. 546.
- ALTER. Zur Statistik der Geisteskrankheiten. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 7, H. 4, Nov. 1911, S. 343.
- BIRNBAUM. Zur Frage der psychogenen Krankheitsformen. II. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 7, H. 4, Nov. 1911, S. 404.
- NÄCKE. Die Dauer der postmortalen mechanischen Muskeleerregbarkeit bei chronischen Geisteskranken, speziell Paralytikern. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, Bd. 7, No. 4, Nov. 1911, S. 424.
- HAKOSVIC. Das nervöse und geisteskranke Kind in der Schule. *Med. Blätt.*, Nr. 19, Okt. 7, 1911, S. 217.
- DELMAS and GALLAIS. Délire systématisé secondaire postonirique. (Soc. de Psychiat. de Paris.) *L'Encéphale*, No. 11, Nov. 10, 1911, p. 472.
- MARTIN. Au sujet de deux observations de délire onirique dans la maladie du sommeil. (Soc. de Psychiat. de Paris.) *L'Encéphale*, No. 11, Nov. 10, 1911, p. 462.
- BALLET, GILBERT. La Psychose hallucinatoire chronique. *L'Encéphale*, No. 11, Nov. 10, 1911, p. 401.
- CITELLI. Sui rapporti fisio-patologici tra sistema ipofisario e varie lesioni di lunga durata sia del faringe nasale che dei seni sfenoidali.—Su una speciale sindrome psichica e la sua cura. *Riv. ital. di Neuropatol., Psychiat. ed Elettrol.*, Vol. iv., F. ii, Nov. 1911, p. 481.
- ROMAGNA-MANOIA. Un caso di autodenuncia per delirio improvviso e fugace. *Riv. di Patol. nerv. e ment.*, Vol. xvi., F. 10, Ott. 11, 1911, p. 620.
- MIKULSKI. Zur Methodik der Intelligenzprüfung. *Klin. f. psych. u. nerv. Krankheit.*, Bd. vi., H. 3, 1911, S. 235.
- STRANSKY. Unilaterales Gedankenecho. Ein Beitrag zur Lehre von den Halluzinationen. *Neurol. Centralbl.*, Nr. 21, Nov. 1, 1911, S. 1230.
- LEY and MENZERATH. L'Etude Expérimentale de l'Association des Idées dans les Maladies Mentales. (VIe Congrès belge de Neur. et de Psychiat., Bruges, 1911.) *Journ. de Neur.*, Nos. 19 and 20, Oct. 1911, pp. 363 and 381.
- ROSANOFF and ORR. A Study of Heredity in Insanity in the Light of the Mendelian Theory. *Amer. Journ. of Insanity*, Vol. lxxviii., No. 2, Oct. 1911, p. 221.
- M'GAFFIN. A Manic-Depressive Family—A Study in Heredity. *Amer. Journ. of Insanity*, Vol. lxxviii., No. 2, Oct. 1911, p. 263.
- KELBE. Eine Insel-Anstalt für antisoziale schwachsinnige Männer. *Ztschr. d. Jug. Schwachsinn.*, Vol. v., H. 1, 1911, S. 22.
- FRANCO DA ROCHA. Contribution à l'Etude de la Folie dans la Itace Noire. *Ann. Med.-Psychol.*, Ann. lxxix., No. 3, Nov.-Dec. 1911, p. 373.
- MAIRET. Le Vagabondage Constitutionnel ou des Dégénérés. *Ann. Med.-Psychol.*, Ann. lxxix., No. 3, Nov.-Dec. 1911, p. 353.
- RICHARDS. A Study of the Military Offences committed by the Insane in the United States Army for the past Fifty Years. *Amer. Journ. of Insanity*, Vol. lxxviii., No. 2, Oct. 1911, p. 279.
- NÄCKE. Hochgradigste Entartung eines Idioten. *Ztschr. d. Jugendlich. Schwachsinn.*, Bd. 5, H. 1, 1911, S. 35.
- BARDIN. Analysis of the Blood in Fourteen Cases of Pellagra. *Amer. Journ. of Insanity*, Vol. lxxviii., No. 2, Oct. 1911, p. 271.

TREATMENT *

- CAFFREY. Deep Perineural Injections of Beta-Eucaine Solutions in Sciatica. *Journ. Amer. Med. Assoc.*, Vol. lvii., No. 19, Nov. 4, 1911, p. 1533.
- HEIDENHAIM. Behandlung der Ischias. *Berl. klin. Wchnschr.*, No. 46, Nov. 13, 1911, S. 2070.
- MORICHAU-BEAUCHANT. Le "Rapport affectif" dans la cure des psychonévroses. *Gaz. des Hôp.*, No. 129, Nov. 14, 1911, p. 1845.
- SCRIPTURE. Psychanalysis and Correction of Character. *Med. Rec.*, Oct. 28, 1911, p. 859.
- CUNNINGTON. Suggestions for the Treatment of Insomnia. *Canad. Pract. and Review*, Nov. 1911, p. 693.
- BERNHEIM. Définition et valeur thérapeutique de l'hypnotisme. *Rev. de Psychiat.*, Tome xv., No. 10, Oct. 1911, p. 402.
- MARKELOFF. Les sécrétions internes et la Neurologie. *Arch. internat. de Neurol.*, Vol. ii., Série 9e, Nov. 1911, p. 277.
- WILLIAMS, LEONARD. The Therapeutic Promise of the Internal Secretions. *Practitioner*, Nov. 1911, p. 605.
- WOLVERTON. Vaccine Therapy in Acute Rheumatic Polyarthritis. *Med. Rec.*, Oct. 28, 1911, p. 868.
- FRIEDLANDER. Involution of Thymus by X-Ray. *Arch. of Ped.*, Vol. xxviii., No. 10, Oct. 1911, p. 810.

* A number of references to papers on Treatment are included in the Bibliography under individual diseases.

Indices

Page references to Original Articles are indicated by heavy type figures.

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